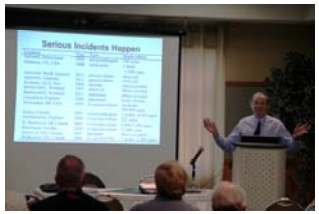
Closer to Home (C2H)

Smaller Centres Water & Wastewater Capacity Renewal Initiative*

Project Report (2012 - 2013) – RADF Project No. EI0678

Project report including operations summary for sub-projects, initiatives, and interventions for the period of January 2012 – December 31, 2013



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Project Administration

Major Project Funding

Rural Alberta Development Fund

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EXECUTIVE BRIEF

The Closer to Home (C2H) Initiative was designed to contribute to sustaining the capacity for safe drinking water and responsibly-managed wastewater of Alberta's rural communities. It's been a one-time capacity and innovation project undertaken by a cross-section of provincial organizations with $3.25 million in funding and resources from *Rural Alberta's Development Fund* (RADF) and others. A series of one-time investments benefiting Albertans were focused within a portfolio of sub-projects, strategic initiatives and interventions.

Using the portfolio approach, 268 rural Alberta communities were engaged in 2012-13 by activities that addressed local need. One-hundred ninety-five certified operators and other officials from 131 regulated waterworks systems were offered an opportunity to complete a first *Drinking Water Safety Plan* (DWSP) closer to home through 14 area cohorts. Another 74 municipalities benefited from 483 contact hours of outreach education through monthly *WaterWise Alberta* Information Sessions. Ninety rural municipalities accessed course offerings via an AWWOA Training Subsidy program extended with RADF support. Customized local interventions were undertaken. Enduring multi-media digital legacies were created.

Many rural Alberta communities generously shared promising practices and transferable good ideas for: local utility operational partnerships; managing succession of skilled regional waterworks staff; smart municipal water conservation practices; sustainable waterworks innovations; and collaborative citizen and municipal governance of recreational watersheds and riparian areas. Distilling and sharing the hard-earned lessons from the *Walkerton Water Tragedy*; including putting a human face on the disaster, as well as codifying lessons from other water-safety disasters and near misses to help an emerging generation of front-line water professionals learn vicariously through others also marked enduring contributions of the *C2H Initiative*. Developmental work started on key issues for some 500,000 Albertans using water via co-operative and private small systems.

Many of Alberta's most experienced certified operators, operating specialists and front-line regulators identified, analyzed, and ultimately helped codify an initial 379 Major Tasks necessary for municipal drinking water and wastewater utilities. This critically-reflective review and documenting of operational Major Tasks represents a transfer of insights and wisdom of a generation of deeply-committed Albertans who quietly go about their work day in and day out and who have amassed vast reservoirs of tacit 'know how'. Their commitment to focus and share represents the building blocks to inform many tools and resources for tomorrow's skilled workforce. This work has also served as one authority source informing the development of 95 new instructional modules made possible with RADF support and ready for further new course piloting across Alberta.

As readers will find in this report, the *C2H Initiative* has been a reassuring example of what Albertans can do together when focused and guided by common values, concerns and commitment. It also reflects a 'made-in-Alberta', proof-of-concept and demonstration of the emergent models of goal-directed, networked governance; social innovations designed to engage public policy issues where governments, industry, educators, non-governmental organizations and citizens are structured to work constructively together on applied solutions and innovations about the many complex public policy issues of our time. Sustaining safe drinking water and managing wastewater responsibly in rural Alberta is achievable by working together thoughtfully and creatively. This report is one expression of how many Albertans are engaged in working on those goals together.

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1.0 PROJECT SUMMARY

The C2H Initiative has been designed to strengthen the capacity of rural Alberta communities. *Closer to Home* has had two main project goals: (1) assist local proponents in smaller Alberta centres to improve a community's ability to consistently provide safe drinking water and (2) assist communities in managing and disposing of wastewater responsibly, according to the requirements of Alberta and Canadian regulation. *Closer to Home* (C2H) Initiative has been a two-year project with eight themes organized into a series of sub-projects, initiatives and programming interventions.

Within the theme areas, the project goals have been realized by increasing capacity through local planning, tools, educational programs, and information resources which have been developed, put to use, and tested across Alberta. The C2H Initiative was administratively hosted by the *Alberta Water & Wastewater Operators Association* (AWWOA) on behalf of partner organizations representing government, municipal, post-secondary and community-capacity organizations. The C2H Initiative was proposed as a development and demonstration project which received $2.4 million in approved funding from the *Rural Alberta Development Fund* (RADF). The funding agreement was finalized in January 2012, with full project implementation commencing in Spring 2012 and with project operations concluding as of December 31, 2013. Various partners, led by the AWWOA, have contributed or committed an additional $850,000 in cash contributions and in-kind services to *Closer to Home*, for an overall $3.25 million project. The project implementation was guided by a framework approach unanimously approved by AWWOA Executive Board in December 2010 and which appears as Appendix A.

Project Rationale (Why)

1. Extend and renew provincial capacity to strengthen local expertise for safe drinking water and responsibly managed wastewater among smaller Alberta population centres, as a public-policy linked response to mitigate known barriers in equity of access to safe drinking water across Alberta's overall population.
2. Mitigate effects of one-time, multi-year demographic workforce adjustments (i.e. 'Baby Boom bubble') associated with predictable large-scale retirements predicted to occur concurrently with large-scale energy sector developments in Alberta as directed towards safe drinking water and responsibly managed wastewater.

Project Actions (What)

- Learning, knowledge and decision-support resource redevelopment informed by current regulatory standards, processes and accountabilities for safe drinking water and responsibly managed wastewater.
- Collaboratively assessing and planning local capacity-development interventions among participating Alberta communities/community clusters (i.e., the latter discussed as 'population catchment areas') related to safe drinking water and responsibly managed wastewater.
- Demonstrating inter-agency collaboration in capacity-renewal activities throughout Alberta, to enable innovation and engagement in partnership with Alberta communities related to water security.
- Create, extend, share, and grow a pool of knowledge for collective impact about sustainable water and wastewater utilities and support early culture change activities among citizens for shared, source water protection.

Project Target (Whom)

- Alberta residents living in communities of less than 5,000 persons or regional, rural population catchments of up to 20,000 persons
- Local government elected and senior administration officials
- Local government, agency, or commission employees working as/recruited to work as water utility operators
- Alberta residents who are private owners of drinking water wells, dugouts, septic and other wastewater systems

Expected Outcomes

At the conclusion of C2H Initiative proponents committed to increasing the quality and quantity of tools, information, and resources available to smaller Alberta communities in order that a range of local leaders and citizens would be more empowered to be appropriately engaged in the roles, responsibilities and management of relationships necessary to sustain a local drinking water service and responsibly manage wastewater. It was also expected that the actions of the C2H Initiative would facilitate the conditions in which smaller Alberta communities would be able to more effectively organize themselves to recruit, develop, and retain suitably qualified water and wastewater Certified Operators. Expected Outcomes included:

	C2H Initiative – Approved Expected Outcomes List
a)	New educational materials to support improved local water security practices for both public municipal systems as well as small, private water supply owners
b)	Perceived increased access to certification opportunities and other community education through learning/skill development innovation
c)	Perceived increased levels of citizen awareness about individual action/domicile and other practices that reduce burden on local treatment systems/as well as quality of discharged wastewater effluent used downstream as raw source water for other communities
d)	Citizens report an understanding about the actual costs of providing water via municipal public systems; specific actions they can take to mitigate quality issues (e.g., discarding cooking oils, proper disposal of unused pharmaceuticals, etc.)
e)	Local government officials, CAOs, and Watershed Protection and Advisory Councils report a perceived increase confidence in local adoption of practices which support Canada's 'From Source to Tap' water policy framework
f)	Participating communities have operators who have completed a *Know Your Own System* working plan, evidenced with a baseline assessment and Standard Operating Procedures (SOPs) development plan
g)	Local elected officials report they have access to resources that inform their roles/responsibilities for safe drinking water
h)	Local elected officials and CAOs report increased confidence of local governments in complying with Terms & Conditions of Approvals granted to facilities
i)	Local operators report satisfaction about access to information, resources, education and mentoring to assure safe drinking water and responsibly managed wastewater
j)	Local government officials report they have been engaged to participate in retention and succession planning of operators and can discuss tools/processes available to do so
k)	Local operators are able to reasonably access certification related education and companion knowledge resources
l)	Local government employers report a perceived and/or real decrease in the amount of management resourcing devoted to water utility recruitment, retention, and associated issue management.

1.1 Structure and Role of the C2H Initiative Project Report

Attending to safe drinking water and responsibly-managed wastewater in a rural context is a "Wicked Problem"* in the public-policy sense. Implementing a responsive capacity project with public funds demands balancing accountability with sensible design for 'working flexibility' to achieve enduring impact. This is especially so as more detailed understandings of the socio-technical and regulatory environment, service-delivery context, and capacity needs of bona fide stakeholders (including local 'receptor capacity') emerge and are integrated into solutions. It is, at many levels, a creative Construction Management approach to implementing a complex 'public-policy facing' capacity and innovation initiative.

As a capacity and innovation enterprise, the *C2H Initiative* has been organized as a portfolio of sub-projects, strategic initiatives and interventions. The portfolio approach was approved within a January 2012 RADF Funding Agreement package. It included "design-build" modelling. The portfolio served to strengthen and extend existing capacities of enduring collaborator organizations. It served to aid in adopting and adapting ideas from other sectors. It illustrated how solutions could be deployed as innovations for water and wastewater sustainability in the rural Alberta context. It served to focus, amplify and accelerate a set of goal-directed activities that form essential building blocks for a more accountable set of practices.

This document is a 'single-window' communication of the *C2H Initiative* portfolio. The report extends the framework and requirements of RADF Outcome Achievement reporting. It presents a high-level summary of milestones, outcomes, impacts, lessons learned and sustainability in a concise tabular format. Additional explanatory or disclosure materials have been presented in the appendices. It's been developed as an enduring reference and legacy for those challenged with sustaining activities as well as for those tasked with follow-up of the formative work. Where specific recommendations are discussed in the *Sustainability* column, it's stressed that these are **non-binding recommendations** for the named organizations. They are, however, recommendations that reflect the informed and strategic counsel of the Project Executive Group (PEG) and other advisors and collaborators to the *C2H Initiative*, including those of the inter-agency Project Advisory Council (PAC).

The *C2H Initiative* was implemented during a nexus period in Alberta's political, economic and social history. Great care was taken to not unduly politicize local water and wastewater issues during the April 2012 Alberta General Election, or the 2013 Alberta Municipal Election. The latter which, with the introduction of the new four-year elected tenure and impending changes to the Municipal Government Act, was a time of reflection, deliberation, and change for many local leaders and communities. In many ways the completion of the *C2H Initiative* and tabling of this Project Report should not be seen as an end, but rather as an opportunity for a new chapter in a continuing commitment of engaged Albertans to public health and environmental stewardship of water as a most precious resource. There are many challenges moving forward – in leadership, workforce, regulatory orientation, the governing of water resources, and in managing and sustaining local utility operations and infrastructure. It's hoped that within these pages readers find cause to celebrate early achievements of a novel, goal-directed networked governance project while discovering hopeful touchstones of solution-based responses which can contribute to Alberta remaining the best place to live, work and play.

* Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences, 4,* 155-169. Accessed (January 2014) at http://www.uctc.net/mwebber/Rittel+Webber+Dilemmas+General_Theory_of_Planning.pdf

2.0 SUB-PROJECT ONE / TWO (START UP AND PROGRAM OPERATIONS)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Enhance and extend the AWWOA's internal capacity as a provincial leadership organization at a time of anticipated large-scale workforce renewal (SP-1/SP-2)	• Establish AWWOA provincial office - accelerated effort to transform high-cost business centre rental to a cost-effective, multi-use provincial association leasehold (April 2012). • Review business processes and engage *Field LLP* to prepare key Standard Form Agreements. • Establish/test a vendor pool of engineering, operational support, educational, evaluation, and water management consultants. • Legal review of Legacy intellectual properties/development pathway. • Commission & Board approval of evidence-informed *Course & Materials Re/Development Model* • Commission first Financial Audit of AWWOA financial statements. • Research/deploy Software-as-a-Service (SaaS) for C2H Initiative, including *Constant Contact*®, *Adobe Connect*®, *Wild Apricot*® association member/ stakeholder engagement, *Adobe Captivate*® *YouTube*®, *Archive.org*®, and Yardstick T2® • Broaden base of documented stakeholders AWWOA has to draw upon for DWSPs/ emergent "source-to-tap-to-source"policies.	• AWWOA has flexible provincial office facilities in Edmonton for core operations, with options for "as needed" issue-based or project-based opportunities. • Successfully establishing and operating a C2H satellite office in rural Alberta (Ponoka) informed process learning as well as policies and procedures for multi-site operations. • Demonstrating and modelling use of "off-the-shelf" Software-as-a-Service (SaaS) in "buy versus build" for Association future capacity considerations. • The profile and use of a large grant derived from public sources catalyzed modernizing many business processes of an established, private non-profit. • Use of a large public grant elevated the nature and requirements of Association governance and working relationships at the Board-level. • Adopting model practices from the Technical Training evidence base (e.g. DACUM, Task Analysis) for current-state/emerging accountability standards and practices expected for regulated technical professionals.	• AWWOA operations from cost-effective, flexible multi-use provincial office lease through 2017. • AWWOA retains choice of SaaS accounts for "at-scale" member/ stakeholder communications. • AWWOA has a C2H Initiative "leave behind" in the form of a detailed stakeholder contact list, including nature/details of C2H engagement. • AWWOA retains Standard Form Agreements, Financial Audit arrangement, and standing external General Counsel arrangements with *Field LLP* and *Brownlee LLP*. • AWWOA retains Course and Materials Re/Development Model to aid in developing/maintaining modularized instructional materials with accountable Quality Assurance/ Continuous Quality Improvement. • AWWOA Executive Board briefed about required orientation and processes for sustaining intellectual properties moving forward. • A recommendation will be made to AWWOA Executive Board in the form of a proposed Business Case for how it can continue to align its new Course roll-out efforts to align with various emerging requirements of employers, post-secondary schools, and occupational regulator.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Establish and maintain an inter-agency project governance structure for Network Governance via a Project Advisory Council (SP-2) Information in this section is intended to be considered with ***Appendix B – Strategic Communications and Key Outreach and Engagement***.	• Engaged partners from Alberta's municipal member leadership organizations, water-related organizations, Alberta ESRD, and post-secondary/community education sector. • Established an inter-agency C2H Initiative, Project Advisory Council (PAC) structure. • Conducted six Project Advisory Council (PAC) meetings in 2012 and 2013.	• Combination of feedback during PAC meetings and one-on-one consultations has been a critical success factor in implementing a goal-directed networked governance project. • AWWOA Executive Board and other PAC members discerned insights about capacity and comfort-levels with Networked Governance-based collaborative models for issue engagement and system capacity renewal (e.g., workforce development, rural community issues, etc.).	• Sustainability takes the form of being embedded in the professional working relationships, trust, and comfort-levels established among specific individuals engaged in an intensive, goal-directed Network Governance-based one-time initiative. • Sustainability takes a second form of "off-the-shelf" transferable process learning of structures and strategies should future issues or collaborative opportunities lend themselves to planning, action, and oversight via a Networked Governance approach.
Provincial Program Operations (SP-2) Information in this section is intended to be considered with ***Appendix B – Strategic Communications and Key Outreach and Engagement***.	• Established a Project Executive Group (PEG) which developed and followed accountable business processes/practices in discharging AWWOA's accountability as Project Proponent/contacted agent to RADF/liaison with PAC. • Recruited two project-based staff resource people, one with a demonstrated interest/aptitude in watershed topics and the other with process skills in community and rural development. • Created and maintained a core provincial program accessible and tailored to the identified needs of rural Alberta municipalities and water management organizations. • An approach to strategic communications was outlined and implemented.	• Developed and maintained a customized list of +/- 400 rural municipalities' contacts. • Established functional working relationships with municipalities /Project Associate evolved as a "go to" information/referral source for rural Alberta. • A *What Can C2H Initiative Do For You?* Circular was developed, detailing available programming. • 90 rural municipalities accessed the common AWWOA Training Subsidy for 267 rural subsidized courses in 2012 and 2013. • 195 Certified Operators & CAOs from 131 municipalities accessed Area Cohorts for DWSP support. • 74 municipalities accessed 483 contact hours of regular monthly outreach education in 2012-13.	• A recommendation will be made that *Alberta Association of Municipal Districts & Counties* (AAMDC) and *Alberta Urban Municipalities Association* (AUMA) enhance their standing support of water/wastewater utility management for Members • A recommendation will be made to Alberta Environment & Sustainable Resource Development (ESRD) that *Drinking Water Operating Specialist* (DWOS)s be resourced as a <u>common provincial program</u> for a sustained period of at least five years, with emphasis on DWSP, Operations Program, and Workforce Renewal implementation support. • C2H Project Associate has been appointed Executive Director of one of Alberta's mandated WPACs.

3.0 SUB-PROJECT THREE (COMMUNITY CAPACITY AND MENTORING)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Cohort Intakes for mentored Drinking Water Safety Plan (DWSP) Completion Sessions (SP-3/SP7) Information in this section is intended to be used with *Appendix C – Verified Cohort Engagement by Municipality/Community* and the companion *DWSP Completion Session Evaluation Summary Report.*	• 14 area cohorts established, ranging from High Level in north to Milo in southern Alberta • DWSP Completion Sessions were approved by Alberta ESRD for 0.3 to 0.6 Continuing Education Units (CEUs) towards maintaining the *Certificate of Qualification* for Certified Operators, providing CEU education closer to home. • 195 Certified Operators & Chief Administrative Officers (CAOs) from 131 smaller Alberta communities and regional water commissions had protected time in a mentored, multi-session format to complete a first, mandatory (ESRD) Drinking Water Safety Plan (DWSP) at a location that did not exceed 2 hours travel time from their home community. • 85 of 195 participants completed an evaluation instrument in November 2013, resulting in 236 self-identified *new things learned or discovered* and 235 key *"Action Pieces"* self-identified to help *implement and sustain* the DWSP.	• An early critical mass of "early adoption" of mandatory DWSPs was completed in rural Alberta that, via field reports, indicate would have not be done to a sufficient baseline quality (or done at all) without the protected time/mentoring. • 98.8 percent of respondents completing a post DWSP CS evaluation indicated they *have, or expect to complete a first DWSP before the end of 2013*. • *DWSP Completion Session* design has been verified as a tool for creating access for rural Certified Operators/CAOs to complete and maintain a DWSP, by: 1. creating protected time to focus on the ESRD prescribed MS Excel template; 2. promoting the proactive Quality Assurance & risk management opportunities of responsive regulatory vehicles; 3. *Situated Learning* (social learning) to identify, compare, and contrast individual facility and shared source water risks. • 84 evaluations indicate *Satisfied* to *Very Satisfied* status with programming closer to home (Schedule VIII, summary report).	• Contracted mentors were encouraged to have local cohorts establish a date and the importance of DWSP updating in a year's time was stressed to all area cohorts. • A recommendation will be made to AWWOA Executive Board that consideration be given to adding the DWSP Completion Session as a course-based offering within the AWWOA Training Program. • A recommendation will be made to Alberta ESRD that Drinking Water Operating Specialists (DWOS) or a suitably qualified designate conduct an annual outreach day as a capacity - enhancing aid in maintaining DWSPs • A recommendation will be made to Alberta ESRD that the Department consider strengthening and enhancing department-wide, provincial program development support for the DWOS role, with enhanced companion support for wastewater abatement capacity in rural locales.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Coaching for Operators (SP-3) – *Coaching for Operators* (CFO) course development Process risk management pertaining to liability of Certified Operators from one facility engaging with operators in an area facility(ies) operating under a separate Approval or Registration (Code of Conduct) warranted development of customized continuing education for more experienced operators to evaluate, form, negotiate, manage/maintain and close-out a coaching-based mentoring engagement.	• *Edmonton Waste Management Centre of Excellence* (EWMCE), *Education Unit* commissioned to develop Canada's first *Coaching for [Water and Wastewater] Operators* course, to be owned and maintained by AWWOA • *Coaching for Operators* was beta tested/evaluated in Red Deer on June 4-5/2013 with experienced Alberta/Saskatchewan operators /operating specialists. • CfO courseware package refined and updated summer 2013 • Alberta ESRD approved a 1.2 Continuing Education Unit (CEU) assignment to *Coaching for Operators* in September 2013. • "Off-the-shelf" package finalized November 2013, including all related copyright clearances, etc	• 16 Alberta working operators/ specialists received a first exposure to a practical, structured coaching process suitable for the water/ wastewater operations culture and multiple settings of work. • A tool set and process approach has been developed and put in place to address / mitigate / resolve concerns senior operators express of perceived liability of being a "good neighbor" to an area facility operating under a different Approval/Registration • *Coaching for Operators* applied in field use in *Town of Grande Cache* and *Village of Rycroft* (August – December 2013)	• As owner AWWOA has assumed the responsibility for maintaining the currency and accuracy of the *Coaching for Operators* courseware. • A recommendation will be made to AWWOA Executive Board that consideration be given to adding the Coaching for Operators as a course-based offering within the AWWOA Training Program. • A recommendation will be made to AWWOA Executive Board that consideration be made to offering Coaching for Operators to major employer organizations as a customized course offering. • A recommendation will be made to AWWOA Executive Board that Coaching for Operators be offered on an inter-provincial basis.
Coaching for Operators (SP3) - Commissioning cohorts one and two	• 10 Certified Operators and operating specialists completed a June 2013 beta-session in Red Deer. • 6 Certified Operators completed a second intake in October 2013, with a modified delivery using a working Certified Operator coach as program co-facilitator.	• Aquatera Utilities Inc. used the *Coaching for Operators* education to guide contracted coaching demonstrations in *Town of Grande Cache* and *Village of Rycroft* in Fall 2013. • City of Edmonton, Drainage Branch adopted Coaching for Operators as a demonstration approach to job-site new employee orientation, especially for *Newcomers to Canada* and "*Millennials*"/*Generation Y*	• Persons oriented to Coaching for Operators continue to use the insights and skills at their worksites as a form of sustainability embedded within the people exposed to the work. • Coaches serve as ambassadors for Coaching for Operators, speaking to the structure approach to maintain relationships/manage risk in worksite on-the-job training. • Aquatera Utilities Inc. / EWMCE selected to present a technical session at 2014 AWWOA *Annual Operator Seminar* on experiences.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Customized Coaching for *Town of Grande Cache* (SP-3) (process prototyping and demonstration)	• Town of Grande Cache local officials demonstrated a commitment to get on the right track with management of water/wastewater utilities and public works. • Aquatera Utilities Inc. selected as coaching service partner/safety and skills assessment completed. • Coaching program approved for new Public Works & Utilities Manager and a utility operator. • Intensive, in-community custom coaching implemented from August – December 2013.	• Independent Operating Specialist assessment pro-offers that customized coaching most likely contributed to manager and operator retention. • Formed the basis/foundation for an extensive program of work required for Town of Grande Cache to rehabilitate and bring up-to-date utility operations. • Highlighted risks that geographic isolation can cause for public safety and operations currency in remote locales. • Demonstrated current state of Town of Grande Cache is not an isolated occurrence in Alberta.	• A recommendation will be made that Northern Alberta Development Council (NADC) take the lead on a partnership-based, northern Alberta water and wastewater sustainability priority initiative, with guidance on specific areas moving forward. • Sustainability is also embedded within the persons of the Town of Grande Cache Public Works department about: 1) the potential of safe, generative work practices, 2) a practical model of professionalism for the modern Certified Operator, and 3) an applied approach to framing operational problems and "troubleshooting"/resolving issues with available resources on-hand.
Customized Coaching for *Village of Rycroft* (SP-3) (process prototyping and demonstration)	• Village of Rycroft a priority demonstration candidate for coaching due to 2012/13 known regulatory considerations. • Coaching program approved for Village operators. • Periodic, in-community custom coaching implemented from August – December 2013.	• Demonstration illustrative of many common issues with very small communities tasked with maintaining increasingly complex surface-water source, Water Treatment Plants. • Generated insights and approaches for how coaching may be designed and undertaken for smaller communities in the future. • Contributed to lead operator retention.	• A recommendation will be made that Northern Alberta Development Council (NADC) take the lead on a partnership-based, northern Alberta water and wastewater sustainability priority initiative, with guidance on specific areas for consideration moving forward. • Skills imparted during coaching will continue to be used, most likely in Distribution and Collection as well as in other Public Works applications.
Community Capacity Facilitation for *Village of Myrnam* (SP-3)	• Chief Administrative Officer requests preliminary community capacity assessment (diagnostic) after attending C2H Initiative DWSP Completion Session.	• Early recognition of risk issues with new operator, new staff • Specific options to get started • Regional collaboration grant application feedback/inputs	• Embedded within the information and insights imparted on the CAO as a result of the community intervention.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Community Capacity Facilitation for Town of Grande Cache (process prototyping and demonstration of transferability of an existing infrastructure assessment model) (SP-3)	• Engaged with Town of Grande Cache and a consulting engineering firm to examine the viability of applying a proprietary community infrastructure assessment process developed for/tested in northern Saskatchewan for its transferable applications in rural Alberta. • Modified DWSP process as a pre-assessment tool for next steps. • Viable action plan for local change.	• Provided a framework for Town of Grande Cache Council to engage in setting priorities and having risk-based planning and action dialogue with new Public Works management and ESRD. • Facilitated risk mitigation/ corrective action measures to address challenges being faced. • Insights about how to engage/ respond to rural Alberta context.	• Town of Grande Cache Council has viable interim options & committed to priority asset/operations renewal in consultation with ESRD. • Interventions cited as retention factor for Public Works & Utilities Manager/early career operator. • Substantive first DWSP is complete. • Proactive dialogue with government stakeholders and commissioned a waterworks improvement plan.
Community Capacity Facilitation for *Flagstaff Inter-municipal Partnership* (SP-3)	• Pre-project expression of interest tabled by Flagstaff Inter-municipal Partnership in July 2011 • Four villages/towns in the partnership seek to re-engage in early 2013 and accelerate aspects of original partnership intent. • Contracted operating specialist services assigned to area to address operational governance, other operational partnership considerations.	• Surfaced/created the conditions for addressing operational governance sustainability of an existing $1.2 million shared SCADA investment • Provided external resources with the skills and insight to instill confidence at the CAO level to engage in planning dialogue. • Formed the foundation for a regional collaboration funding application to *Municipal Affairs*.	• Process learnings highlight a broader set of provincial considerations with Operator Consortium and Regional Partnership models to be addressed by ESRD/Municipal Affairs moving forward for sustainable approaches. • Process resulted in a nucleus of municipalities that will collaborate on goal-directed/functional task needs, with the opportunity to scale the partnership out further.
Community Capacity Facilitation for Marwayne, Kitscoty, and Dewberry Operational Partnership (SP-3)	• Early project engagement via the AUMA *Smooth Operators* session. • Test communities for adapting BC Auditor General's approach to *Managing Knowledge* in the Public Sector via case-based narratives. • Post case-study learning indicated operator work-flow, other operational partnership considerations; managing partner village engaged contracted operating specialist for 3rd party review of operations/governance.	• Reoriented/realigned operations partnership consistent within the original negotiated intent. • Contributed to a body of insights about operations governance critical success factors (CSFs) and sustaining Operator Consortiums • Opportunity to implement new *Vulnerability of Public Officials* materials in a live-test setting. • Contributed to Certified Operator retention for three rural Alberta communities.	• Operational workflow across the three villages has been mapped/ documented and viable plan to enable operator retention in place. • Operational partnership among the three villages partnerships has been renewed for a two year Agreement and operational governance issues have been identified for attention. • Alberta Municipal Affairs approved regional partnership funding. • An engineering firm with expertise to assist operational change context.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Community Capacity Facilitation for *Paddle Prairie Métis Settlement* (SP-3)	• Personnel at Settlement were unable to participate in first DWSP Completion Session in High Level. • Custom intervention arranged to facilitate aid transition into DWSP.	• Field reports from High Level DWSP Completion Session indicate no uptake in Session #2.	• Recommendation is made to Alberta ESRD that regional DWOS follow-up directly with Settlement about DWSP completion/remedial support that may be beneficial/necessary.
Community Capacity Facilitation for *Town of High River* (post June 2013 Alberta Floods) (SP-3)	• Provided travel-support to Certified Operators from High River to engage in a disaster-recovery twinning project with Certified Operators from Town of Slave Lake/MD 124 (Lesser Slave River) as designed/facilitated by Associated Engineering. • Provided in-community working session for Town of High River, Wheatland County, MD Foothills 31 to complete first DWSP prior to December 31, 2013 (Cohort 14).	• Engaging with operators from another Alberta community that is at a different point in the disaster recovery process served a practical peer-mentoring role. • Operators explored disaster recovery stories and strategies they could share with others. • Operating Specialist engaged in the process for *Associated Engineering* discerned lessons that can be transferred to other client groups as needed.	• Operating Specialist for *Associated Engineering* has committed to aid Operators draft an articles, including insights and lessons learned, to be offered for publication in a 2014 issue of *Alberta Utility Operator*. • C2H Initiative contribution to be incorporated as part of a broader package of interventions/lessons that *Associated Engineering* is to present at the 2014 AWWOA Annual Operator Seminar (AOS).
Community capacity - preliminary current state system diagnostic of regulated water co-operatives via purposeful system assessment of 14 Alberta rural water co-operatives (SP-3) Rural water co-operatives engaged in this sub-project are identified in ***Appendix D – Engagement Profile by Alberta Rural Community***	• Established a functional partnership with Alberta Federation of Rural Water Co-operatives Ltd. [AFRWC] (provincial member cooperative association). • Engaged professional consulting engineering firm with expertise to undertake system assessment. • Leveraged/adapted methodology of 2004 Alberta municipal waterworks assessment for application to a selection of rural Alberta water co-operatives. • Completed 14 rural water co-operative system assessments, with detailed reports back to the board of directors of the AFRWC and the 14 member co-ops.	• Engaged a critical mass of +/- 200 regulated rural water co-ops in a constructive, functional way. • Tested a transferable model of waterworks system assessment specifically applicable to rural water co-operatives. • Provided a diagnostic platform at scale for AFRWC/ its advisors to identify systemic issues and transferable lessons/insights about rural water co-operative current and emerging state. • Produced tangible planning information to engage about emerging issues pertaining to regulation and sustainability of rural water cooperatives.	• The 14 individual system assessment reports as well as the synthesis Summary Report of the sub-project provide a well-founded base for AFRWC to advance dialogue about the condition, issues, and sustainability of Alberta's rural water co-op systems. • AFRWC and its consulting engineer demonstrated a model process that can be applied on a predictably pre-costed, fee-for-service basis for the other 80 AFRWC Member co-ops, who seek a criterion-based/ regulation-aligned current-state system assessment. • A tool to inform DWSPs for rural water co-operatives.

4.0 SUB-PROJECT FOUR (REGULAR OUTREACH EDUCATION)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Monthly Outreach Education of Water/ Wastewater Utility Governance and Management information (SP-4) A model of regularized (3rd Thursday of the month), one-hour outreach education delivered via a hybrid of teleconference and Adobe Connect webinar platform and modelling elements of CBC Radio's *National Farm Radio Forum* adult education model was designed/developed/implemented/ tested in 13 sessions contiguously between November 2012 and November 2013) Information in this section is intended to be used with ***Appendix E – WaterWise Alberta Information Session Summary*** and ***Appendix F – Verified Municipal Engagement in Monthly Outreach Education***	• Program/delivery model developed, documented and executed September – Oct 2013; commissioning of platform vendor arrangements (e.g., *Constant Contact*®, tele-presence provider/ *Adobe Connect*®), promotion. • Recruiting of a senior Professional Engineer (P.Eng.) with specific, long-service experience developing and maintaining Alberta's Drinking Water and Wastewater policy and programs served as Knowledge Broker and subject-matter advisor. • Recruiting of an experienced process facilitator to provide continuity as host and moderator. • 2013 schedule of monthly information sessions. • Facilitated follow-up received by the Project Associate and enabled by the P.Eng. in a capacity as knowledge broker/resource linker. • Completion of *Media Consent to Record* instruments/conversion of 9 sessions into archival material.	• 74 *verified* Alberta municipalities participated a total of 203 times over 13 one-hour sessions, for 483 contact hours of outreach education over a one-year programming period. • Evaluation self-reports from small Alberta communities indicate respondents value having an intermediary organization (AWWOA) curate and organize sessions with authorities on specific topics of water/wastewater regulation, governance and management. • Respondents indicate insights and information obtained via sessions has been used to inform local municipal councils as well as have access to ask questions they would not normally have a chance to ask/get feedback and follow-up about (especially about Drinking Water Safety Plans and federal Wastewater Treatment matters). • *WaterWise Alberta* Information Session evaluation feedback informed the program structure for Getting on the Right Track with Local Water & Wastewater outreach sessions and DVD.	• Sustainability is "embedded" with the participants who accessed the sessions monthly in real-time, with Reminders and Referral sustainability processes created through the post-production of nine sessions as digital audio recordings with supporting PDF text materials at Archive.org and 3,000 *Getting on the Right Track with Local Water & Wastewater* multi-media briefing kits. • For the four sessions where Alberta ESRD officials determined they were not in a position to provide consent for recording/reuse of live-event materials, a recommendation will be made to ESRD/AUMA that consideration be given to sessions being periodically re-delivered via *Alberta Urban Municipalities Association* (AUMA)'s webinar education session series. • A recommendation will be made to *AWWOA Executive Board* that it considers a monthly one-hour "Tech Talk" modelled on WWA-IS, as an Update model of continuous learning for operational issues and technologies, possibly proposed in partnership with the Alberta Rural Development Network (ARDN) and/or RES'EAU - WaterNET

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Water/Wastewater Utility Governance - Enduring Digital Audio Recordings accessible as downloadable MP3 podcasts (SP-4) Information in this section is intended to be used with ***Appendix E – WaterWise Alberta Information Session Summary***	• Designed Monthly Outreach Education to have archival value. • Created business processes and commissioned standard form legal instruments to support archival syndication of live-event content. • Developed a post-production audio treatment, including voiceover, and post-produced 9 digital archival education sessions.	• Provides a "Reminder" and "Reference" resource for live-event participants • Provides a "Referral" and "Just-in-Time" (JIT) accessible learning resource for colleagues who were not able to participate in the live-event, as well as for local decision-makers, including Council members who are new subsequent to the October 2013 *Alberta Municipal Election*.	• Established an enduring Web 2.0 presence at Archive.org and published audio podcasts and supporting PDF (text) materials under a Creative Commons 3.0 license (i.e., Attribution, Non-commercial, No Derivative Works). • Published to the DVD masters/3,000 initial run within the Digital Toolkit Package of *Getting on the Right Track with Local Water and Wastewater Utilities* multi-media DVD; with +/- 1,000 units distributed to rural Alberta municipalities in late January 2014.

5.0 SUB-PROJECT FIVE (NEEDS ASSESSMENT AND COURSE RE/DEVELOPMENT)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Instructional Needs Assessment via DACUM [Developing a Curriculum] process (SP-5)	• Completed management review of current needs assessment processes for water/wastewater Certified Operators • Commissioned four, discipline-defined DACUM workshops in February-March 2012 to establish Major Areas of Responsibility and Major Tasks for Certified Operators employed in Alberta work settings. • Produced four draft DACUM charts that were reviewed by participants /updated notes section added.	• Essential process learning and insights of the depth, breadth, scope, and nature of water/ wastewater operator work in contemporary Alberta settings. • Antecedent activity for discipline based and Common area Task Analysis in 2013. • Draft DACUM profile charts served to advance planning conversations about the extent of complexity, the "high stakes" nature of contemporary water and wastewater operator work, and informed pathways to respond.	• Draft DACUM charts released to all participants in March 2012. • DACUM charts used as foundation to deconstruct/assemble Common tasks across disciplines; map out a detailed Task Analysis by four water and wastewater operator disciplines and areas Common to 4 disciplines. • Recommend to AWWOA Executive Board that DACUM charts retain a status as an internal working document and successor 2013 Task Statements/Amended Competency Profiles serve as the main reference for instructional needs assessment specific to Alberta worksites.
Instructional Needs Assessment via Task Analysis process (SP-5) Information in this section is intended to be used with ***Appendix G – Inventory of Task Statements developed under Sub-project Five.***	• Retained a Special Advisor to map out/organize operator educational needs assessment for Alberta worksites. • Retained *Canadian Vocational Association* (CVA) accredited advisor to facilitate an accountable Task Analyses. • Engaged senior Certified Operators/other specialists and conducted eight multi-day Task Analysis working sessions. • Reviewed +/- 700 Major Tasks of DACUM/others; analyzed/charted 379 common & discipline-specific Tasks Statements of Alberta water/wastewater operator work.	• First known comprehensive Canadian Task Analysis of water and wastewater operators. • Task Statements enable site-specific SOP/SWP and Hazard Assessments & coaching tasks. • Task Analysis modified to convert tacit knowledge of very experienced front-line professionals into documented "nuggets of wisdom" to mitigate risk/fast track new hire introduction/support retention. • Exceptional opportunity to debrief long-service Certified Operators about career-related insights and lessons learned.	• A critical mass of self-identified "reflective practitioners" among the senior Certified Operator pool. • A recommendation will be made to AWWOA Executive Board that Task Statements serve as a document of public record when engaging about needs for Alberta work sites. • A recommendation will be made to AWWOA Executive Board that Task Statement with Tasks that require Standard Operating Procedures/ work-site specific Hazard Assessment information be used in custom employer education/made accessible on a preferred licensing partnership basis

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Instructional Module Development for Course and Materials Re/Development and AWWOA Course Redevelopment (SP-5) Information in this section is intended to be used with ***Appendix H – Inventory of AWWOA Instructional Modules at December 31, 2013***	• Developed a modularized approach to instructional materials development to manage duplication/facilitate currency. • Reviewed Task Analysis outputs, Alberta ESRD 2004 MELT profile, Alberta Legacy Materials, and 2012 Association of Boards of Certification (ABC) *Need to Know*s • Mapped instructional modules • Commissioned the research and pre-advisory writing of 95 modules for four disciplines/common tasks. • Completed independent Content Advisory Review of 95 modules. • Delivery of pilot-ready materials for *Level I Certification Preparation, Level II Certification Preparation, Water Treatment, Wastewater Treatment, Water Distribution, Wastewater Collection, Support Systems* component, and *Disinfection* components. • Delivered 95 instructional modules suitable for further piloting, refinement, review and AESRD audit of mandatory entry-level training equivalent status for AWWOA course requirements as well as for third-party licensing with employers/other jurisdictions.	• Surfaced intellectual property processes/historical context of Alberta Legacy Materials that required major revisiting of design/development approach. • Cross-referencing of four authority sources resulted in identification in content gaps across authority source materials, noted as *Does Not Mention* in an authority source mapping section of modules. • Discerned there are +/- 2,000 operational and technical terms that presently have variation in definitions across organizations, authorities, and publications, creating unique challenges for sustainable educational/related materials development. • Pioneered instructional design work which, based on early benchmarking, is unparalleled in scope and rigor in Canada and likely across North America. • The regulated occupations of certified water and wastewater operators are much more complex from a cognitive, psychomotor, and knowledge management and public policy accountability perspective than the culture indicates, and due consideration is demanded in planning workforce development efforts.	• Sustainability takes the form of 95 core instructional modules that have been developed and vetted against recognized public policy authority sources and in a way that can be readily-maintained and re-purposed with comparative ease and flexibility as technologies, standards and treatment processes change. • A recommendation will be made to AWWOA Executive Board that a one-year sustaining implementation project be undertaken, starting with *Level I Certification Preparation*, to pilot, refine and validate and further engage key stakeholders about course renewal. This recommendation is supported by a companion draft business plan scheduled for presentation to AWWOA Executive Board at their January 2014 meeting. • A recommendation will be made to AWWOA Executive Board that part of the sustaining business plan is for preferred licensing arrangements of AWWOA Instructional Module materials for Alberta and out-of-province employers that are seeking to customize and integrate work place specific training with certification education. • A recommendation will be made to AWWOA Executive Board to consider a Glossary project, to align with a *Novice to Expert* framework.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
***Know Your Own System* (KYOS) course development** (SP-5)	• Designed a proposed (2012) *Know Your Own System* (KYOS) course that used Task Analysis and Quality Assurance/Quality Control (QA/QC) methods to document work-site specific practices for conversion into site-specific. • Redeveloped KYOS to augment/ align more closely with sector entry-level awareness compliance and risk-mitigation education specific to local facilities.	• The proposed (2012) KYOS course was rejected by Alberta ESRD for Continuing Education Units (CEUs) in October 2012. • The rejection by ESRD of the proposed (2012) KYOS course catalyzed the relationship with Steve & Elizabeth Hrudey that resulted in a publication partnership for the Hrudey casebook sub-project.	• A Recommendation will be made to AWWOA Executive Board that KYOS be re-submitted to Alberta ESRD for consideration of CEUs. • A Recommendation will be made to AWWOA Executive Board that KYOS be established as a multi-course offering, starting with *KYOS Essentials,* and integrated with AWWOA ongoing *applied* support for DWSP completion of operators new to the sector.
Know Your Own System* (KYOS) course enabling support via the Hrudey Casebook project** (SP-5/SP-7) Note: American Water Works Association (AWWA) has confirmed the publisher title of the new casebook is to be: ***Ensuring safe drinking water: Learning from frontline experience.	• Engaged Dr. Steve and Elizabeth Hrudey as prospective project collaborators for KYOS re-design. • Entered into tripartite partnership among *C2H Initiative*, *Canadian Water Network,* and *Walkerton Clean Water Centre* to enable a new casebook for North American front-line water professionals. • Created two, ½ day workshops (March 11/13; Sept 25/13) which were assigned 0.3 Continuing Education Units (CEU), called *Why Learn the Hard Way?,* and which served as an interactive forum to further refine the casebook. • Commissioned a university-community engagement in the form of an operations group based blinded peer-review. • Completed casebook manuscript on schedule in December 2013; publication by AWWA for USA ACE 2014 by June '14 or earlier.	• 101 Certified Operators accessed 0.3 CEU accredited education on March 11, 2013 for *Why Learn the Hard Way?* • +/- 60 Certified Operators and local officials accessed *Why Learn the Hard Way?,* as part of a *Water Week North* conference collaboration. • 16 of 25 prospective short-listed operator reviewers accepted an invitation to complete a blind peer review of the manuscript; with 15 completing the review and providing substantive feedback, including several indicating the casebook use will aid in transforming practices/ improve waterworks safety. • Dr. Steve Hrudey cited *C2H Initiative* partnership as an essential enabler for casebook completion.	• Publication partner *American Water Works Association* (AWWA) will make casebook available on an enduring basis by publishing the manuscript and adding the book to the AWWA publication roster. • A retail purchase price of +/- 50 USD has been pre-negotiated among the Hrudey's and AWWA, to assure the casebook is accessible as a trade publication for working operators. • AWWOA has pre-purchased 150 copies of the casebook at the pre-publication partner rate of 30% off the AWWA published retail price. • RADF artwork is prominently featured on the cover of the publication/inside; AWWOA contributions are recognized in the *Acknowledgement* section; and the casebook could reasonably be expected to circulate with approximately 50,000 copies over a 5-7 year period.

6.0 SUB-PROJECT SIX (UTILITY GOVERNANCE, MGMT, OPERATIONAL KNOWLEDGE)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Taking Care of Your Drinking Water and Wastewater: A Guide for Members of Municipal Councils adaptation, guide production, and provincial distribution (SP-6)	• *Alberta Environment & Sustainable Resource Development* (ESRD) secured permission from the Government of Ontario to adopt/ adapt *Taking Care of Your Drinking Water and Wastewater* for Alberta as an in-kind contribution to C2H. • 1,800 coil-bound hard copies via Alberta ESRD in 2012 and 2013. • Enduring PDF version available for download on ESRD web in 2012. • Used as a core resource of the *Drinking Water Safety Plan* (DWSP) Completion Session and *Know Your Own System* (KYOS) course.	• Guides made available on-site at 2012 and 2013 AWWOA Annual Operator Seminar (AOS). • 347 guides included with initial C2H Initiative outreach to rural Alberta CAOs in July 2012. • Included in May 2013 outreach to 377 Chief Administrative Officers (CAOs) and 377 Chief Elected Officials of rural Alberta communities and regional water/wastewater commissions. • Learned a multi-point approach is required for communications with rural municipalities.	• Enduring PDF version available for download on ESRD web. • Alberta ESRD placed order for additional coil-bound printed copies in late 2013. • To support ongoing active adoption, a recommendation will be made to Alberta ESRD, that a future version of the Guide include insights/lessons gathered from Alberta municipal opinion-leaders, to more closely align with the peer-champion and aspirational change management editorial orientation of the source Ontario model document.
Sustaining a Local Water Service **(SaWS) action learning project for North-Central Alberta** (SP-6)	• Establish a functional, contracted partnership with Northern Lakes College (NLC). • Establish a rural operator cohort for North-Central Alberta, starting with the *Drinking Water Safety Plan* (DWSP) Completion Session • Commission a NLC-led Action Learning study of area community leaders in the NLC CCI catchment. • Mutual engagement about small community disaster recovery in a comparative session developed by NLC and Concerned Walkerton Citizens (CWC). • Received SAWS Project Report/ prepared a clarifying response to facilitate report's enduring use.	• Two cohorts established in 2013 – one based in Slave Lake (serving operators from Red Earth Creek – High Prairie – Wabasca – Slave Lake and areas within) and one in High Level (serving operators from Zama City to Manning to Rainbow Lake to Fox Lake/areas within). • Three outreach education sessions for owners, officials and operators on the *Lessons from the Walkerton Water Tragedy* (September 2013, November '13) in Slave Lake and High Prairie. • A community issues preliminary report was prepared.	• Enhanced working relationships among Comprehensive Community Institution (CCI) and catchment area public works/operation groups • A recommendation will be made that Northern Alberta Development Council (NADC) facilitate a partnership-based, northern Alberta water and wastewater sustainability priority initiative, with guidance on specific areas for consideration moving forward, including NLC as a partner • A recommendation that NADC assign a program officer/internal resources to developing capacity expertise about northern Alberta water/wastewater utility issues.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Strategic and recurring communications to rural Alberta Chief Administrative Officers (CAOs) and Chief Elected Officials (CEOs) as agents of/"persons responsible" under the *Environmental Protection and Enhancement Act* (EPEA) (SP-6)	• Development/validation of a customized contact list for rural Alberta municipalities and regional commissions. • Strategic communications package distributed to 347 rural Chief Administrative Officers (CAOs) in July 2012 • Development of a *"What Can C2H Initiative Do for You?"* circular • Strategic communications package distributed to 377 Chief Administrative Officers (CAOs) and 377 Chief Elected Officials in May 2013. • Regularized communication to 377 Alberta communities via a *Constant Contact®* solution. • +/- 900 final C2H communications made to rural Alberta municipalities in January 2014.	• Core cluster of Alberta rural municipality administrative and elected officials engaged regularly in late 2012/2013 on specific issues of topics for EPEA "persons responsible" • Demonstration of inter-disciplinary learning among utility owners, officials, and operators through the: *WaterWise Alberta* Information Sessions; *Drinking Water Safety Plan* (DWSP) Completion Sessions; the *Getting on the Right Track with Water and Wastewater* outreach education sessions (September 2013); and the *Lessons from Walkerton Water Tragedy* presentations.	• 1,100 *Taking Care of Your Drinking Water and Wastewater: A Guide for Members of Local Councils* hard copy guides (along with companion communications) distributed. • A recommendation will be made to the *Alberta Association of Municipal Districts and Counties* (AAMDC), the *Alberta Urban Municipalities Association* (AUMA), the *AWWOA* Executive Board, and Alberta's WPACs that a partnership-based program of water and wastewater management rural outreach and engagement be further developed. • Educational toolkits available for local officials via 3,000 initial units of *Taking Care of Your Local Drinking Water and Wastewater Utility*. • On-demand/"as needed" tool access at *Archive.org* and *YouTube* on an enduring basis.
Municipal Land-use Planning from a Watershed Planning Perspective (SP-6)	• Engaged with *Land Stewardship Centre* (LSC) about practical ways of linking municipal decision-making to Source Node (DWSP) risk/watershed sustainability. • LSC proposed a prototyping project to help local municipal officials improve decision-making about land use from a watershed planning perspective. • LSC completed the design, initial proof-of-concept and community engagement roll-out in 2013.	• A framework tool/process for engaging local municipal officials about the watershed impact of land use decisions. • A practical, robust and sensible approach for engaging responsible watershed-related decision-making that aligns with Alberta's new land-use and wetlands policy context. • Many municipal officials are concerned about impact of land use decisions on water but feel ill-equipped to engage issues.	• The Agreement for this initiative has been specifically designed to situate the rights of all associated IP with LSC as a policy incentive to continue developing, testing, refining, strengthening capacity. • A core set of rural municipalities have been identified and have agreed to participate in beta-testing the prototype.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Getting on the Right Track with Water and Wastewater **outreach education** (SP-6) Information in this section is intended to be used with ***Appendix I – Enduring Video Suite (on-demand access at YouTube/Archive.org)***	• Engaged by Aquatera Utilities Inc to support a *Water Week North* partnership w/ AWWOA with one-time support from *C2H Initiative*. • Designed a package of interdisciplinary outreach education for local owners, officials and operators; primer questions for officials about water/ wastewater for 2013 Alberta municipal election. • Conducted 3 contact hours of outreach education in Grande Prairie (Sept 25) and Okotoks (Sept 27) that has been awarded 0.3 CEUs by Alberta ESRD. • Customized companion sessions (i.e., *Why Learn the Hard Way?* ½ day session; Walkerton public talk for GP/Fairview - Sept 25) and *Quad Region Partnership* local officials consultation – Sept 27)	• Proof-of-concept of an intervention that makes more transparent the inter-related roles of local owners, officials and operators, including ways of enabling "same-time/same-place/same-content/messages" interdisciplinary education. • Event-based design structured to generate post-event digital content for syndication on Web 2.0 (e.g., YouTube, Archive.org) as well as an initial 3,000 multi-media DVDs, with +/- 1,000 initial sets sent to CAOs/chief elected officials in January '14. • More local engagement of water/wastewater issues pre-2014 municipal election. • Proof of concept (Slave Lake, Sept 26) for a "visitorship-style" initiative featuring *Concerned Walkerton Citizens*.	• Video briefing toolkit – via pre-event production planning, licensed use, and post-production of three educational sessions (*Taking Care of Your Drinking Water and Wastewater* briefing, 29 minutes finished production; *Examining the Vulnerability of Public Officials*, 29 minutes finished production; *Walkerton Water Tragedy – A Journey from Infamy to Excellence*, 1 hour, 13 minutes finished production) • Sustainability embedded in the insights of the +/- 60 persons impacted by Dr. Steve Hrudey's *Why Learn the Hard Way?* session. • Sustainability embedded in the insights gleaned/added validation of key issues management/ "on the right track" with post- 2013 Alberta Flood recovery for Quad Region Partnership.
Getting Water Wise Alberta **applied case study tools for rural Alberta municipalities** (SP-6) Information in this section is intended to be used with ***Appendix I – Enduring Video Suite (on-demand access at YouTube/Archive.org)***	• Designed an intervention to identify and amplify good local practices in rural Alberta that offer insights/lessons for other municipalities, informed by BC Auditor General 2009 *Managing Knowledge* in the public sector. • Designed a prototype production. • Approved prototype approach and commissioned four additional case studies in August 2013.	• Produced five case studies in an engagement-based partnership with villages of Marwayne, Dewberry and Kitscoty; Town of Hanna and Henry Kroeger Regional Water Services; Town of Cochrane; Town of Olds; and Alberta Lake Management Society (ALMS), Nature Alberta, Pigeon Lake Watershed Assn, and Leduc County.	• *Getting Water Wise Alberta* case studies are included in the *Digital Toolkit Package* of the *Getting on the Right Track with Local Water and Wastewater Utilities* multi-media DVD sets. • *Getting Water Wise Alberta* cases are available at OurAlbertaWater channel of YouTube and downloadable at Archive.org with a *Creative Commons 3.0* licensed use.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Lessons from *Walkerton Water Tragedy* Visitorship program [adoption/renewal of a traditional university agricultural extension model for rural engagement] (SP-6)	• Engaged with C2H *Initiative* governance partner *Alberta Centre for Sustainable Rural Development* (ACSRD) on design of a university-community engagement intervention for sustaining rural utilities. • Designed an in-community experience featuring *Concerned Walkerton Citizens* co-founder, Bruce Davidson. • Followed up with stakeholders from March and September 2013 who requested local outreach for colleagues and decision-makers. • Conducted an intensive rural visitorship program from Nov 19 – November 29, 2013, designed on a traditional agricultural extension education outreach/community engagement model.	• 145 Albertans , including 21 elected officials, participated in 10 sessions in Calgary (AUMA pre-conference, Rocky View County), Red Deer (City of Red Deer, Red Deer River Watershed Alliance), Edmonton (ESRD/AHS, NAIT), High Prairie and Lac La Biche. • At least one Certified Operator (as reported by ESRD) opted to resign on reflecting about the responsibility/consequences associated with providing safe drinking water in rural context. • Facilitated presentations with change-oriented impact by an authority from rural Canada with "lessons learned" credibility derived from living through and supporting the recovery of Canada's most serious/tragic drinking water disaster to-date.	• Secured licensing rights for a one-time, production use of a *C2H Initiative* choice of a 2013 *Walkerton Water Tragedy* presentation as part of the visitorship contract package. • Sustainability embedded in the local actions of the persons impacted by the visitorship presentations and related engagement/small group meetings with municipal influencers and decision-makers that formed the visitorship program. • Provides a proof-of-concept and demonstrated framework/model approach for other outreach to rural Alberta on municipal sustainability concepts, using a traditional university agriculture extension approach.
"Source Node" Protection Concepts for Operators [a demonstration] (SP-6) Purpose-driven education to assist Certified Operators better conceive of Source Node risk and sources of information/scenarios to inform *Drinking Water Safety Plans* (DWSP)	• Identified and engaged suitable resources from the *City of Dawson Creek, BC*, & *The Concerned Walkerton Citizens* (Ontario) • Co-designed, competed, and secured plenary session slots at the 2013 AWWOA Annual Operator Seminar (AOS). • Produced two keynote sessions at AWWOA AOS on March 13, 2013.	• +/- 400 Alberta Certified Operators received a first documented AOS exposure to concepts of proactive Source Node protection from established Canadian leaders. • Multiple self-reports of personal impact of the *Walkerton Water Tragedy* presentation, with requests for broad leadership exposure at local/Cabinet-levels.	• Quality audio/video recordings of *Municipal Watershed Management: Protecting the Source and the Operator's Role* [Reg Whiten, P.Ag.] and *Walkerton Revisited: Community Risks & Lessons for Operators* [Bruce Davidson] recorded but unproduced. • Informed *Walkerton Water Tragedy* outreach in Alberta in September and November 2013.

7.0 SUB-PROJECT SEVEN (TRAINING SUBSIDY & TRAINING SUPPORTS)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
AWWOA Training Subsidy for smaller Alberta communities (SP-7) . Information in this section is intended to be used with ***Appendix J – Verified Municipalities Accessing the Training Subsidy***	• C2H Initiative enabled an extension of the one-time *Alberta Environment/Alberta Justice Creative Sentencing* funds that initially supported an AWWOA Training Subsidy • AWWOA Training Subsidy was distributed in strategic communications in 2012-2013.	• 90 rural Alberta municipalities accessed the AWWOA Training Subsidy in 2012 and 2013. • 267 verified Continuing Education Unit (CEU)-based course offerings were supported for rural Albertans through the AWWOA Training Subsidy in 2012 and 2013.	• In late 2013, the AWWOA Executive Board approved a Board motion to extend the AWWOA Training Subsidy for the 2014 program year, drawing on internal AWWOA operating resources to underwrite the program for 2014.
AWWOA Operations Development Library (SP-7)	• Engaged with Subject Matter Experts (SMEs) to review/curate available 3rd party publications. • Developed a procurement list of prospective materials. • Purchased sets of 52 publications/ multi-media materials from the *American Water Works Association* to cross-reference as one authority source pillar of draft Instructional Modules (SP-5). • Produced coil-bound library copies of 27 public access education resources specific to water and wastewater accessible via the *Educational Resources Information Center* (ERIC). • Implemented a traditional card-borrowing system with inventory. • Established authoritative AWWOA on-site reference library of water/ wastewater educational materials with 40 year range (historical base line) to current state materials.	• Additional rigor in developing of draft Instructional Modules, with the ability to cross-reference against recognized authority source materials as well as recognize and discuss gaps in authority materials which inform additional areas for rural Canada specific development (e.g., pond and lagoon based municipal wastewater systems) • Reduced the "on-boarding time" for new contracted technical writers, who could readily cross-reference industry terms in using the Alberta-specific data points from the Task Analysis statements and Content Advisory input. • Learned that Canadians have an established publication partnership/development approach with *American Water Works Association* (AWWA).	• A baseline borrowing library of quality publications from an industry authority source that can be used to inform internal AWWOA program development, AWWOA Member/NAIT/other Comprehensive Community Institution faculty development. • A recommendation will be made to AWWOA that an an on-site "Reference Room" be established at AWWOA Provincial Office, where Members as well as faculty from Alberta public institutions can access Operations Development Library reference materials. • A recommendation will be made to AWWOA Executive Board that a publication partnership with AWWA and Saskatchewan partners be explored for a 2nd Edition of the 1999 *Iron and Manganese Removal Handbook,* to test the viability of Canadian publication partnerships.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Licensing of First Nations (Alberta), Technical Services Advisory Group (TSAG), Basic Math Course for repurposing content/use as learning objects (SP-7)	• Learned TSAG Adult Educator and Circuit Riders have been working on applied math for operators that is aligned with Literacy & Essential Skills (LES) approach. • Reviewed instructor and participant materials/presented to AWWOA Training Committee for consideration/decision. • Executed a licensing agreement.	• Align efforts/leverage efforts of TSAG Adult Educator. • Inventory of "off-the-shelf" mathematics questions and answers licensed to repurpose. • Enables AWWOA resources to share expertise/learning on an inter-jurisdictional and collaborative basis. • Leverages and recognizes excellent work being undertaken to build First Nations local capacity.	• One-time license fee paid for a perpetual license to use/repurpose all the questions in the TSAG Basic Math Course. • License fee includes provision for 3 years of access to QA/QC and upgrades as a result of the TSAG field test/use/evaluation. • Supports culture change about how learning materials can be accessed and resources and efforts can be appropriately shared and aligned in contemporary times.
Baseline/Exploratory Assessment of Literacy & Essential Skills in Rural Public Works (SP-7)	• Received feedback, especially from stakeholders in northern Alberta and outside 'the corridor' that presented as Literacy & Essential Skills (LES)-related issues warranting further examination. • Consolidated insights/learning from TULIP Symposium (SP-9). • Engaged *Alberta Workforce Essential Skills* (AWES) society to undertake an exploratory, baseline study of LES in a rural public works context.	• Preliminary confirmation that gaps exist among the nine Literacy & Essential Skills (LES) recognized in Canadian public policy for employability in rural municipal public works. • Confirmation that most rural public works supervisors do not understand how to identify and frame LES-related gaps and plan strategies to remediate. • Introduced LES-related concepts within operator-related public policy in Alberta.	• A recommendation will be made to the AWWOA Executive Board that provision for attention to Literacy & Essential Skills (LES) be integrated in *Level I Certification Preparation* during the beta-testing process. • A recommendation will be made that Alberta water/wastewater operator stakeholders engage with *Portage College* about the model and partners they are using to engage LES-related issues for municipal public works, heavy equipment operators (HEO), and water/wastewater operators.
Board training support for *Alberta Federation of Rural Water Co-operatives Ltd* to engage with other Alberta co-ops on emerging financing innovation at *ACCA Gathering 2013* conference(SP-7)	• Engaged with AFRWC about sustainability of aging rural water co-operatives across Alberta. • Facilitated access to the *Alberta Community & Co-operative Association (ACCA) Gathering* 2013 in Red Deer for key AFRWC directors.	• Enabled resource linking to other Alberta co-operative capacity/expertise associated with sustaining co-operative structures/models	• Sustainability embedded in the relationships formed and the material transferred through AFRWC Board of Director completion of the Gathering 2013.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Distributed learning platform testing for "high stakes" education (SP-7)	• Researched "off-the-shelf" e-learning platforms acceptable to/in use by the *Government of Alberta* for "high stakes" training and development (e.g., Registry Agents, etc.). • Determined *Yardstick – Testing & Training* met the criterion for a demonstration project. • Established working relationship. • Established an online e-learning presence via Yardstick's T2 "white label" e-learning platform. • Contracted learning materials development for testing with rural Alberta officials based on typical Flash® conversion process. • Recruited 19 rural local officials who are prepared to pilot.	• Insights about level of effort for content conversion needed, so it's engaging and compelling to users at a distance. • Limited impact at conclusion of C2H Initiative operations (December 31, 2013). • Opportunity to demonstrate how completion of structured online learning modules can be converted into awarding of completion documentation that supports demonstration of due diligence-related commitment by local officials. • Potential to leverage/ demonstrate for other "high stakes" municipal public works online learning applications	• Extend service agreement with Yardstick for one-year. • Recommendation is that AUMA and/or AADMC consider a partnership with the AWWOA and Alberta Municipal Supervisors Association (AMSA) to further test and develop the *Yardstick T2* platform.
First Nations (Alberta) TSAG, local Water Treatment Plant (WTP) *Enhanced Circuit Rider Training Program Access* (*eCRTPa*) program completion support (SP-7) Information in this section is intended to be used with ***Appendix D – Engagement Profile by Alberta rural community***	• Engaged First Nations (TSAG), Circuit Rider Training Program as a co-founding governance partner of *C2H Initiative.* • Monitored province-wide innovations in remote monitoring and Circuit Rider support that are transferable, especially to geographical dispersed Municipal Districts, Counties, Special Areas, and Improvement Districts. • Engaged on a 2013 initiative to accelerate enhanced access to Circuit Rider Trainers/feedback on remote monitoring support for local operators in 34 Water Treatment Plants in Alberta.	• Accelerate the focus on common program development of the *eCRTPa* for the TSAG Trouble Shooter, Adult Educator, and region-assigned Circuit Riders. • Lessons learned are transferable to remote monitoring and distributed support in Alberta MDs, IDs, counties and Special Areas as access to Certified Operators with Direct Responsible Charge (DRC) becomes a premium resource further into this decade.	• Memorandum of Understanding guides the sub-project implementation, including TSAG specification of tools required for common program support and assignment of roles and responsibilities created as a result of the one-time *eCRTPa* program development investment. • Engage TSAG to present lessons learned at a future AWWOA Annual Operator Seminar (AOS) as well as feature article(s) in *Alberta Utility Operator* newsletter.

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Applied video tutorials of common water and wastewater sampling and field analytics (SP-7)	• Reviewed a draft 2012 Alberta ESRD sampling guide to model ways of making associated task instruction more standardized through the use of the emerging "as needed, on demand" tutorial video model as pioneered by Khan Academy, YouTube, etc. • Engaged with subject matter experts on prototype design. • Designed authentic work site demonstration pre-production/ produced prototype video demonstrations	• Purposeful engagement to encourage dialogue about the opportunity and challenge of culture change (e.g., *YouTube*, *Vimeo* tutorials) on new workforce entrants and the opportunity to transform workplace learning and decision-support.	• A recommendation will be made to AWWOA Executive Board that tutorials be integrated with final development of the new Disinfection course, with final development recommended to occur with Alberta ESRD. • Demonstration of a rapid development model that can be applied to other content areas of water/wastewater operations to develop quality video tutorials validated against manufacturers specifications, Task Statements, or Standard Operating Procedures.

8.0 SUBPROJECT EIGHT (INNOVATION & PUBLIC ENGAGEMENT ENVELOPE)

***Tooling Up for Learning, Innovation and Productivity* (TULIP), Literacy & Essential Skills symposium** (SP-8)	• Engaged with Community Learning Network (CLN) as a *C2H Initiative* governance partner on a strategic and substantive initiative. • Cross-promoted/major presenting sponsor of TULIP on Feb 19/13 at *Edmonton Chamber of Commerce*. • Provided highly-visible program delivery support via tailored messaging about water and wastewater operations/public works opportunities in the Opening Remarks as well on a plenary session panel.	• 104 participants from Alberta's career development, community education, Settlement services, and Comprehensive Community Institutions (CCIs) had explicit exposure to water/wastewater operator careers, including the role that Literacy and Essential Skills (LES) play in the provision of essential services. • Project-level engagement to the roll-out of the SCALES (Supporting Canadian Advancement of Literacy & Essential Skills) Project.	• Access to SCALES Connect for use by Alberta municipal public works employers at http://bit.ly/1bREuBb • New cross-sector relationships that can be accessed to support attraction and retention in rural Alberta, especially via newcomer/settlement services partners and career development professionals. • Integrate Literacy & Essential Skills (LES) into existing employment readiness and counselling services

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Public Engagement via Web 2.0 (SP-8) Established Web 2.0 accounts at *YouTube.com* and *Archive.org*, and populated with public-accessible materials Information in this section is intended to be used with ***Appendix I – Enduring Video Suite (on-demand access at YouTube/Archive.org)***	• Established an *OurAlbertaWater* channel at YouTube.com • Established a Web 2.0 account and Archive.org • Populated/published accounts with finished audio materials from *WaterWise Alberta* Information Sessions, *Getting Water Wise Alberta*, and sundry public engagement/public service announcement materials. • Engaged with CTV2 (formerly ACCESS Network) in pre-production design of *Getting Water Wise Alberta* case studies for parameters on a 2 minute PSA version.	• Created access and local promotion of the promising practices and leadership being demonstrated by villages of Marwayne, Dewberry, and Kitsoty, the towns of Hanna, Olds, and Cochrane, the Henry Kroeger Regional Water Services Commission and Alberta Lake Management Society, Pigeon Lake watershed stakeholders, etc.	• Enduring access using Creative Commons 3.0 licensing terms (i.e., Attribution, Non-commercial, No Derivative Works) for a library of original digital audio, video and text-based materials created via C2H Initiative in 2012 and 2013. • CTV2 has licensed the use of, and gifted, $69,000 of "as available "air time to run five *Getting Water Wise Alberta* public service announcements as a series between 2014 and August 31, 2017. • Properties are: *A Tale of Three Villages; And the Work Goes On; Conservation Pays Dividends; True Cost of Water; and It's All Connected*
Public Engagement about Water & Wastewater Operations Careers (SP-8)	• Engaged publisher of *Canadian School Counsellor* (CSC) magazine/ negotiated preferred pricing to re-run full-page *Working with Water* advertisement in national print edition/online edition; arranged for distribution of 500 DVDs to Alberta secondary schools in the 2013 *Back to School* issue. • Engaged *Careering* magazine/ negotiated full-page print ad in national edition in October 2013 w/distribution to 14,000 career professionals.	• Ongoing process of creating awareness about water and wastewater operations as applied "Green" careers. • Maintain and extend a strategic supplier working relationship with Canada's principal publisher of career-related information for secondary schools and career development professionals.	• Sustained through enduring appearance of full-page advertisement in 3,300 printed issues strategically circulated throughout secondary education and 10,000 electronic subscriptions. • Renewal of community-based tools from the 2010 Career Attraction Project, by placing an additional 485 DVD units in Alberta secondary schools as an insert to the *Canadian School Counsellor* (CSC) magazine. • A recommendation to AWWOA to establish a program of regularized outreach/promotion about water and wastewater careers.

9.0 **SUBPROJECT NINE** (TOOL KIT INITIATIVES)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Vulnerability of Public Officials **briefing materials toolkit** (SP-9)	• Engaged recently retired Alberta Crown Prosecutor Susan McRory as a legal education consultant. • Developed a "preventative law" approach to engaging owners, officials and operators about duties and obligations in law. • Commissioned and licensed an original monograph entitled *The Vulnerability of Public Officials*. • Tested/refined the concept for a *Vulnerability of Public Officials* toolkit during scheduled *WaterWise Alberta* information Sessions in August 2013 and *Getting on the Right Track* outreach in September 2013. • Produced a researched/vetted monograph and companion video briefing.	• Demonstrated early positive feedback of owners, officials, operators about a proactive, preventative law approach for regulatory capacity. • Reinforced key messages to clarify *prevention* of adverse events/disaster as an aspirational goal of safe drinking water and responsible wastewater management that supersedes due diligence. • Demonstrated how a proactive educational approach can be used to facilitate local communication. • Field reports of increased role clarity, some reduction in micro managing by elected officials.	• Established the contractual relationship with Ms. McRory as one of licensing *The Vulnerability of Public Officials* monograph, as an incentive for Ms. McRory to maintain and update the materials as new learning/case law becomes available. • Established an approach to working with regulatory and justice officials which is proactive and preventative and that can be applied in other enforcement-based regulation. • Monograph and companion *Water Wise Alberta* Information sessions accessible at Archive.org. • Print/audio/video briefing material included in 3,000 *Getting on the Right Track with Local Water and Wastewater Utility* multimedia DVDs
Getting on the Right Track with Local Water and Wastewater Utilities **multi-media toolkit** (SP-9)	• Negotiated rights with three subject matter experts (SMEs) for access to video educational materials on an enduring basis. • Produced three original education productions and re-purposed a fourth production from the *Working with Water* workforce development production. • Post-produced a robust multi-media package in a professionally packaged 2-DVD set.	• Continuing access to briefing materials and tools for recently-elected municipal officials in the new four year mandate. • Briefing materials to continue aiding CAOs and lead operators in working with local Councils on water/wastewater issues.	• 3,000 multi-media DVD sets, with an initial +/- 1,000 mailed out in January 2014 to Chief Administrative Officers (CAOs) and chief elected officials of rural municipalities, with the remainder to be distributed among AAMDC, AUMA, and AWWOA. • Cross-platform access to video materials and PDF files on *YouTube* and *Archive.org*

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Operational Succession toolkit (SP-9)	• A model for a risk-based approach informed by the international nuclear power utility sector and which aligns with Alberta's *Drinking Water Safety Plan* (DWSP) model was researched/developed. • A concise, evidence-informed primer on Operational Succession was commissioned/distributed. • Part one of a two-part *Alberta Utility Operator* communication called *Who Will Follow in Your Footsteps?,* was implemented in Fall 2012, accompanied by a call-to-action for operators to be proactive in engaging successors, along with 3,000 DVDs of *Exploring Careers in Water and Wastewater Operations.* • Part two of the *Alberta Utility Operator* articles *Are You Ready for the "Big Handoff"?* ran as the cover article in Spring 2013 AUO. • Operational Succession toolkit published on 3,000 copies of *Getting on the Right Track* DVDs • Re-purpose inter-agency advertising artwork from 2010 Career Attraction Project for *Canadian School Counsellor* (Fall 2013) and *Careering* (Fall 2013)	• Alberta ESRD reported in July 2013 that there has been no net loss of operators in Alberta. • Community self-reports in rural Alberta of ongoing challenges associated with finding, developing, and keeping public works personnel with water and wastewater *Certificate of Qualifications*. • The Operational Succession toolkit was integrated into/ distributed to a provincial working session of 70 senior public works supervisors/ directors on November 12, 2013 in a workforce development risk management workshop for the *Alberta Municipal Supervisors Association* (AMSA). • Limited anecdotal accounts from the field are emerging, specifically about women who have chosen water/wastewater operator as a career as informed by the role models in the *Exploring Careers in Water and Wastewater Operations* DVD.	• 3,500 additional copies of the *Exploring Careers in Water and Wastewater Operations* DVDs have been distributed to local Alberta Certified Operators as well as Alberta secondary schools in 2012 and 2013 as enduring resources for Career Information and Career Investigation. • 3,000 back-issues (Fall 2012/Spring 2013) of *Alberta Utility Operator* dispatched across Alberta contain *Who Will Follow in Your Footsteps?* as well as *Is Your Operation Ready for "the Big Handoff?"* articles. • The *Operational Succession primer, Who Will Follow in Your Footsteps?,* as well as *Is Your Operation Ready for "the Big Handoff?"* article re-prints are available as PDF files. • The Operational Succession toolkit is available in a readily identifiable toolkit folder on 3,000 copies of the *Getting on the Right Track with Local Water and Wastewater Utilities* multi-media DVD toolkit, with 900 copies of the DVD toolkit distributed in January 2014 to rural CAOs and chief elected officials. • A recommendation will be made to AWWOA Executive Board, Alberta ESRD, and Northern Alberta Development Council (NADC) for more focused support of Operational Succession.

10.0 SUBPROJECT TEN (PRIVATE SMALL SYSTEMS INTEGRATION)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
Private Small Systems Integration (PSSI) fact-finding (SP-10)	• Completed comprehensive fact-finding of existing Canadian and US programming on private small water systems/wastewater systems for the +/- 400,000 rural Albertans who consumed/dispose of water via private well, cistern, and septic-based solutions.	• Identified existing materials and models from Canadian and USA jurisdictions that can inform Alberta policy/programming. • Increased the profile of private small systems as an integral component of a comprehensive rural watershed management strategy for rural municipalities.	• Engaged with *Alberta Innovates, Energy and Environment Solutions* in late 2013 with an offer to share fact-finding information in lieu of not being able to participate in new *AI-EES* project advisory committee formed to review current state and needed actions for small private system solutions in Alberta.
Private Small Systems Integration (PSSI) – environmental scan/current issues assessment (SP-10)	• Engaged a research and evaluation consultant in Spring 2013 to consolidate and complete an environmental scan and current issues assessment of PSSI.	• Consolidated much of the early and existing Alberta context and other cross-jurisdictional leadership/identified champions and presented findings.	• Fact-finding reporting document that can be shared/used by AWWOA partners who are taking the lead on further developing PSSI extension and educational programs/services.
Private Small Systems Integration (PSSI) – community education (SP-10)	• Engaged Land Stewardship Centre to develop and pilot a ½ day community education session on private septic systems to complement ESRD's *Working Well* program.	• First known Alberta provincial educational resource for private landowners that is being further developed in partnership with private on-site sector providers.	• Educational solution owned/further developed by LSC; integrates with *Green Acreages Guide* workshop and ESRD *Working Well* education.

11.0 SUBPROJECT ELEVEN (CQI/ACTION LEARNING FOR SUSTAINABILITY/CHANGE)

Subproject, Initiative, or Intervention	Milestones/Outcomes	Impacts and/or Lessons	Sustainability
***Working with Water* - Workforce Development Symposium and associated reporting** (SP-11) (In-kind contribution to *C2H Initiative* of $50,000 cash contribution by *Alberta Human Services,* through the *Workforce Attraction & Retention* partnerships program)	• Produced a provincial workforce development symposium on November 4, 2011. • Post-produced a 9 segment video briefing series at YouTube, Archive.org, and on 1,000 DVDs, called *Working with Water (Inform, Attract, Develop, Retain).* • Produced an analytic report on core themes emerging from the symposium.	• 347 *Working with Water (Inform, Attract, Develop, Retain)* briefing DVDs distributed to rural municipalities in 2012. • *Current State Assessment of the Operations Workforce*; *Mapping Early Directions for Workforce Renewal*; and *Insights, Issues and Promising Practices* directly informed C2H Initiative design/ programming activities.	• *C2H Initiative* project launch event. • Symposium created the applied framework/design input by Alberta stakeholders for the specific ways C2H Initiative was implemented. • Established a baseline and "touch stone" among stakeholders for others to access in future to compare progress, assess what is working as well as what is not effective in development/retention.
Unintended Consequences of Regulation on Rural Operators – Briefing & Keynote Presentation (SP-11)	• Dalhousie University Water Studies PhD(C) Megan Kot presented recent/leading Canadian published research on the unintended consequences of regulation on rural operators to +/- 400 Alberta Certified Operators at 2012 Annual Operator Seminar (AOS).	• Ms. Kot's research findings outline considerations for workforce retention design of Certified Operators applicable to rural Alberta locales. • Demonstrated an applied knowledge translation model to make research about operators accessible to operators.	• A nine minute video briefing was published as part of a 1,000 unit DVD run entitled *Working with Water (Inform, Attract, Develop, Retain)*, with 347 distributed in CAO packages in July 2012/remainder distributed over C2H Initiative. • Video segment available for access www.youtube.com/ouralbertawater
Success Factors for Change in Smaller Communities – Briefing & Keynote Presentation (SP-11)	• Dalhousie University Water Studies PhD(C) Megan Kot and her supervisors provided early access to insights from a *Canadian Water Network* (CWN) sponsored exploratory study of success factors for drinking water systems in smaller communities, to +/- 400 Alberta Certified Operators at 2012 Annual Operator Seminar (AOS).	• Ms. Kot's preliminary research findings informed the approach used to design and engage smaller Alberta communities. • The preliminary Success Factors were used as a "touch stone" for all *C2H Initiative* fieldwork interventions and have consistently been shown to be present where smaller Alberta communities have observable/ demonstrated results.	• A 19 minute video briefing and companion presentation slide deck for use by C2H Initiative proponents, partners and rural stakeholders was published in 2012 at Archive.org. • Key Alberta stakeholders have been made aware of the early CWN work and are encouraged to support a further development of innovation and change in a rural Canadian context as it applies to drinking water and wastewater systems.

12.0 "LESSONS LEARNED" SYNTHESIS

- ***Provincial Certified Operator Pool*** - Alberta Environment and Sustainable Resources Development (AESRD) reported *no material net change* in the water and wastewater Certified Operator roster as of July 2013. Field reports however suggest many municipalities across rural Alberta continue to experience staffing challenges to meet certified operator requirements. This warrants further careful monitoring. It is unclear who, if anyone, has overall accountability for workforce monitoring and planning of regulated operator personnel. It takes several years of development, including education, experience, and Direct Responsible Charge (DRC) requirements to achieve Level III and Level IV certification status. Caution is urged, especially at Level II and Level III Water Treatment plant levels, many which are in isolated northern Alberta locales. "Talent pipeline" issues specific to certified operators in rural Alberta remain and indicates a further monitoring/follow-up.

- ***Provincial Policy Supports for Responsive Regulation (general)*** - During *C2H Initiative* implementation, specific to local community supports, several practical program support ideas were brainstormed and discussed. Feedback from collaborators with long-service "institutional memory" can be characterized as "That's a great idea. We had that, but it was shut down (or abandoned) in the early 1990s." Supports include full-time, dedicated "hands on" training staff with the tools and time required to provide demonstrations and workplace coaching support *in-community* (e.g., modified DWOS role). It includes practical, hands-on instructional aids (e.g., mobile training units). In the past at least *ten* days of protected instructional time for entry-level training were required. Many of the most respected long-service certified operators engaged through *C2H Initiative* were trained, developed and supported with these methods. It seems there was a period of focused program support from the 1980s through to the early 1990s that was well-supported in public policy and largely resourced by the *Government of Alberta*. It aided the current generation of long-service rural operators. As the long-service rural work force continues to turn-over, many program support foundations from which Alberta's experienced generation benefited could be "reactivated" for a focused, multi-year renewal period. The experienced technical and operational human resources to engage in this work are currently available, but shouldn't be taken for granted, as this resource will not be indefinitely accessible as they move into later life and onto other interests.

  There have also been challenges presenting from the local government-level about system navigation and transparency issues pertaining to the requirements of managing drinking water and wastewater. A significant public safety and environmental protection risk factor continues to be lack of awareness, including of consequences, at the local-level. This presented as the *C2H Initiative* gathered momentum and profile. It was an outcome of the monthly *WaterWise Alberta* Information Sessions. Officials and operators in many smaller Alberta communities started to turn to the *C2H Initiative* Project Associate for system navigation support and "way-finding" assistance. The *Government of Alberta* would likely benefit in its relationships with rural municipalities through some kind of municipal "single-desk" or "one-window" solution to water and wastewater programs, including approvals, operations, compliance, funding, infrastructure support, and watershed management. There has been an undercurrent of frustration expressed by many rural leaders. This could be mitigated through organizational design solutions, marginal new investments, and positioned as a re-commitment to other levels of government in helping manage the transaction costs of regulation by reducing the "finding time" and "task time" to support compliance and sustainability.

- ***Provincial Policy Supports for Responsive Regulation (operating specialist supports)*** - At the public policy-level, Alberta has many elements of a *Responsive Regulation* approach to drinking water and wastewater regulation. This could be more explicitly recognized and leveraged, consistent with the emerging international policy directions about *Responsive Regulation*. The *Drinking Water Operating Specialist* (DWOS) role, in particular, is a promising element of a *Responsive Regulation* approach, where such regulation is designed around *a well-crafted set of* ***supports*** *and sanctions*. The observed experience to-date appears to be that DWOS resources are largely-isolated within AESRD's region-based structure. Consequently, it seems the *Government of Alberta* is likely not fully-realizing a return on the DWOS FTE investment. That is, it does not at this time benefit from systematically leveraging DWOS' collective intelligence and field-based insights. Given the international trend to a more pro-active, responsive style of regulating drinking water, evidenced in part by adoption of water safety planning in many nations, it would be beneficial for the *Government of Alberta* to consider the merits of a common, provincial *Drinking Water Operating Specialist* (DWOS) program. That is, a goal-directed, common program with capacity-development (e.g., ongoing Drinking Water Safety Plan support; common water quality monitoring tools; Operations Program development support; security capacity support, especially for imminent cyber-vulnerabilities; asset management and lifecycle extension support; new technology integration, etc.) and field support.

  A corollary provincial program approach might be considered for wastewater management. There was some frustration and confusion expressed by rural operators about support available in the context of recent federal regulatory amendments impacting wastewater. There is also more awareness among municipal public works operators that their community's wastewater effluent is often another community's raw drinking water source. In some instances wastewater operators whose facilities discharge to surface water bodies specifically asked about the expansion of the DWSP water safety planning risk management and quality assurance approach for wastewater applications, citing the Water Cycle and specifically concern for communities downstream of the wastewater discharge outfalls they operate.

  How specific implementation of any enhanced provincial policy supports benefiting rural communities might be executed (i.e., grow internal FTEs versus outsource versus a co-sourced hybrid akin to that used during the 2013 Alberta Floods) is secondary to: recognizing legitimate provincial ***support*** roles, so meaningful regulation is taken seriously at a local-level; an appreciation of expressed needs at a local-level; and a demonstrated commitment for pragmatic, solution-focused responses that contribute to sustaining rural water and wastewater utilities.

- ***Workforce renewal sourcing*** - Many local officials and post-secondary leaders continue to operate with a belief the target of recruiting and retaining skilled persons who can achieve certified operator status ought to be at the secondary (high) school-level. There are many career opportunities (e.g., operations, technical, engineering, environmental, etc.) in water and wastewater, but rural operations are still largely municipal public works-based. It may be more appropriate develop the "talent pipeline" for rural Alberta through a Municipal Careers or Environmental Careers pathway *and* engage multiple candidate pools. Future efforts could extend earlier municipal career initiatives of the Alberta Urban Municipalities Association and include Alberta Association of Municipal Districts and Counties, Local Government Administration Association, and Alberta Municipal Supervisors Association working on joint initiatives, ideally integrating the 2011 Water and Wastewater Operations career tools. Given the desire of rural employers to retain trained and certified personnel closer to home, consideration could also be given to a *Women Building Futures* (www.womenbuildingfutures.com) approach for municipal public works.

- ***Scope-of-Practice and Mastery Support of Certified Operators*** – It's now understood in considerable detail how the roles of the certified operator have, and continue to, rapidly evolve. Alberta has enjoyed and benefited from early pan-Canadian leadership in water and wastewater operations education and training. This is a legacy worthy of respect and celebration, but also evolution. Education and practice support for development and retention demands stakeholders understand and respond to these frontline, regulated professionals as the guardians of safe water and stewards of the environment that they are. As we've learned vicariously through others' experiences, operators are *the* critical last line of defense. In a rural context there's often not a correlation between a level of the operator certification required for facilities operated and the scope of practice or skill set required. This is consistent with rural health services evidence, where performing-for-results in resource-constrained settings embodies its own breed of practice characterized by considerable self-efficacy, ingenuity, initiative, self-direction, and managed risk-taking. Working side-by-side with these front-line professionals we've also borne witness to their commitment to craft and co-celebrated their deep sense of personal responsibility and commitment to community and citizens.

  Through working with seasoned Alberta operators and other specialists in analyses that led to codifying an initial 379 major operations tasks, it's now understood that education for operator certification is a necessary but insufficient condition for the education, decision- and other practice-supports necessary to assure development, performance-for-results, and retention in a rural context. More is required. Much of it is being pioneered by a small cadre of dispersed DWOS, contract operating specialists, and the First Nations Circuit Riders. There is artistry as well as science to the craft of stewarding water resources in utilities. A razor sharp focus ought to be placed on the experience of the frontline professional in the first five years, through the lenses of the emerging *From Novice to Expert* learnings of other professions.

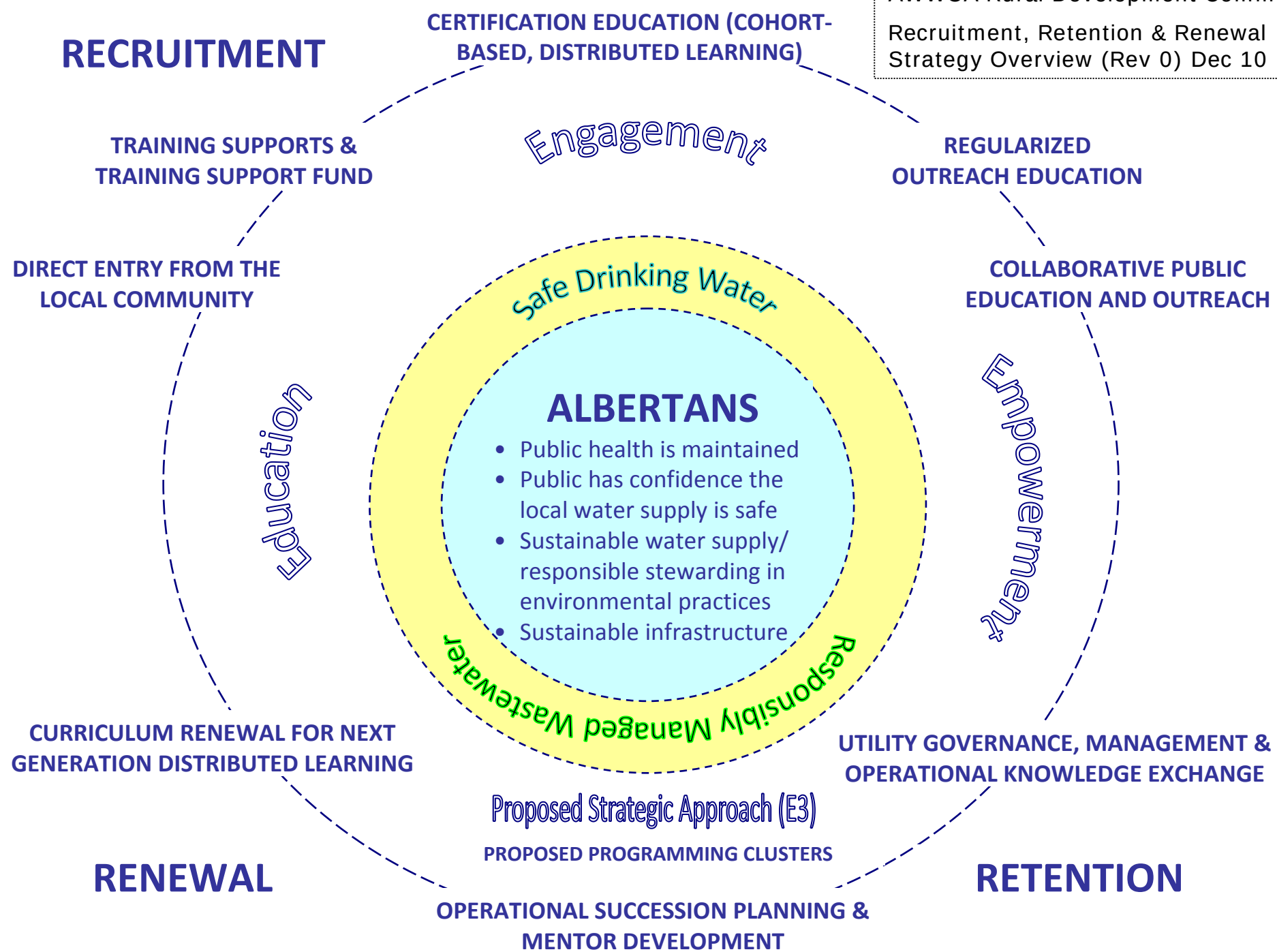
- ***Local compensation and rural municipal public works, workplace factors*** – It's also now well-established that monetary compensation and non-monetary factors, including front-line management practices and instability of many local governments hinders rural retention of skilled personnel. Finding and keeping excellent skilled staff means paying them appropriately for the responsibility and risk they are undertaking; addressing specific issues including affordable housing in various rural Alberta locales; understanding and acting on inter-related roles and responsibilities; and taking the operation, maintenance and sustainability of local water and wastewater utilities seriously.

  At the outset of the *C2H Initiative*, stakeholders were briefed about *Canadian Water Network* supported work offering insight into success factors for smaller water systems. Insights shared (see Kot, 2012 via video briefing cited in Appendix I) are consistent with the *C2H Initiative* experience in much of rural Alberta. At one level municipal public works personnel with water and wastewater certifications ought to be compensated relative to the risk and responsibility they are tasked with undertaking. At another level, owners and officials are challenged to better understand key roles, responsibilities and relationships and support public works/utility operations accordingly. It's predictable that the sustainability of many systems is dependent on owners, officials and operators recognizing interdependencies and developing effective communication and functional processes to get the required work done safely and sustainably. The single, consistent message heard from operators pre-project was clear. It was "owners and officials don't understand what we do and they don't understand what they're supposed to do." Initiating the conditions for sustainable rural utilities demanded creating pathways for understanding and communication among owners, officials and operators. That foundation has been now laid so other factors can be more readily addressed.

APPENDIX A
Rural Recruitment, Retention & Renewal Strategy
approved by AWWOA Executive Board (Dec 2010)

AWWOA Rural Development Comm

Recruitment, Retention & Renewal Strategy Overview (Rev 0) Dec 10



APPENDIX B
Strategic Communications and Key Outreach and Engagement

APPENDIX B
Strategic Communications and Key Outreach and Engagement
Closer to Home (C2H) Initiative – 2012/2013

TIMING	AGENGY	DESCRIPTION
March 14, 2012	ESRD	Briefing for *Drinking Water Operating Specialists* (DWOS) on C2H Initiative (2012 AOS, Aherne)
March 14, 2012	AWWOA	Dalhousie University PhD(C) Megan Kot briefs +/- 400 Alberta stakeholders on *Success Factors in Small Systems*
April 17, 2012	EWMCE	Briefing/exploratory meeting with Edmonton Waste Management Centre of Ex, Education Unit (Voyer, Aherne)
April 25, 2012	AUMA	Co-present (Voyer) "Smooth Operators" webinar provincial with Mayor Jenelle Saskiw of Village of Marwayne
April 27, 2012	AUMA	Provide written counsel on Operations section of draft AUMA Water Policy document (C2H PEG)
May 23, 2012	Aquatera/GPRC	Northern Outreach (by teleconference) (Aherne)
June 20, 2012	ACSRC	Briefing/exploratory meeting to discuss collaboration with ACSRC (Hallström/Aherne)
July 25, 2012	Aquatera/GPRC	Northern Outreach in Grande Prairie (Aherne)
July 17, 2012	AB Munis	Provincial mail out to 388 Chief Administrative Officers (CAOs) of smaller Alberta municipalities
August 3, 2012	CLN	Outreach/briefing/opportunity exploration with ED of Community Learning Network (Aherne, Hanger)
August 9-10, 2012	ACSRC	Integrating Water Innovation Forum, Camrose (Hanger, Lane, Hallström)
August 14, 2012	AUMA	By-invitation briefing for AUMA *Small Communities Committee* (Aherne)
August 15, 2012	N. Alberta	Targeted fax outreach to 40 northern Alberta villages, towns, counties and municipal districts
September 2012	AWWOA	Collaborate on *"Who Will Follow in Your Footsteps?"* recruitment call-to-action article w/ 3,000 DVDs
September 5-7, 2012	ARMAA	Outreach to ARMAA and Alberta Emergency Management Agency [AEMA] (Hanger)
September 11, 2012	ACSRC/AWP	Rural Alberta Watershed Resources Workshop, Leduc (Hanger, Lane)

APPENDIX B – STRATEGIC COMMUNICATIONS, OUTREACH AND ENGAGEMENT

TIMING	AGENGY	DESCRIPTION
September 13, 2013	Aquatera/GPRC	Northern Outreach, Grande Prairie/Fairview, (Aherne)
September 14, 2012	NLC	Northern outreach/engagement w/ President of Northern Lakes College; on-site visit to Gift Lake (Aherne)
October 9, 2012	TSAG	Briefing/exploratory meeting w/ Circuit Rider Training Program (CRTP) Program Manage, W Davis (Voyer, Aherne)
October 11-13, 2012	ARDN	Outreach/engagement at Creating Rural Connections ARDN Conference, Olds (Lane)
October 12, 2012	AAMDC	Briefing/exploratory meeting w/ T Blumenthal of Alberta Assn of Municipal Districts & Counties (Aherne, Hanger)
Oct 15-19, 2012	UN Water for Life in Ca	*Storm Warning: Water, Energy and Climate Security in a Changing Climate* International Forum, Banff (Lane)
October 16, 2012	AUSF	By-invitation briefing for Alberta Utility Stakeholders Forum, Red Deer (Hanger, Voyer)
October 23, 2012	CWWA	Outreach to Dr. Steve Hrudey about KYOS, George Neurohr (N. Alberta Muni Eng/DWOS), Kelowna (Aherne)
October 25, 2012	City Red Deer	Briefing/exploratory meeting w/ City of Red Deer about Know Your Own System (KYOS) field site (Wilson, Aherne)
October 2012	Constant Cont	Establish Constant Contact/populate with contact information on 380 rural Alberta municipalities/use (Hanger)
November 2012	LGAA	Briefing to Local Government Administration Association – Alberta, Zone 6 (Hanger)
November 2012	AUMA	Briefing/progress meeting w/ R. Bocock & A. Fischer to review collaboration (Aherne, Hanger)
November 2012	ESRD	Briefing/exploratory meeting w/ Dr. Donald Reid on DWSP implementation/sampling and analytics (Aherne, Lane)
November 6, 2012	TSAG	TSAG Conference (first observe/engage w/ Bruce Davidson of Concerned Walkerton Citizens) (Aherne, Hanger)
November 8, 2012	Muni Affairs	Deliver written briefing on C2H Initiative to Office of the Minister of Municipal Affairs (Hon. D. Griffiths)
November 15, 2012	AAMDC	Observe Cabinet Minister's forum w/ emphasis on water-related questions from municipal officials
November 21, 2012	AEMA	Outreach/engage to explore possibility of Water Emergency planning model for smaller municipalities (Aherne)
December 2012	AWP	Briefing/exploratory meet w/ L. Fox/J. MacDonald to discuss Watershed Toolkit collaboration (Aherne, Lane)

APPENDIX B – STRATEGIC COMMUNICATIONS, OUTREACH AND ENGAGEMENT

TIMING	AGENGY	DESCRIPTION
January 2013	Twitter	Establish the @c2halberta Twitter account
February 11, 2013	MSGC	Outreach to Krista Laboucane, Director of Métis Strategic Training Initiatives Society (Aherne)
February 19, 2013	CLN	Engage re water/wastewater essential skills at TULIP Symposium in Opening Comments/panel (Aherne, Hanger)
March 11-13,2013	AWWOA AOS	Hrudey ½ day session for 100 certified operators; operator plenary briefings on Source Node (Whiten, Davidson)
March 13-14, 2013	LGAA	Outreach to Local Government Administration Assn – Alberta (LGAA) members, Red Deer (Hanger)
March 20, 2013	AAMDC	Observe Alberta Cabinet engagement (post 2013/14 budget) w/ AAMDC elected officials; focus on water (Aherne)
March 20, 2013	AMSA	Outreach/engage Alberta Municipal Supervisors Association (AMSA) about public works collaboration (Aherne)
March 21, 2013	CWN/CoF	Council of Federation – DWSP resources for small centres by-invitation consultation, Ottawa (Aherne, Janzen)
April 4, 2013	NSWA	Outreach/engagement w/ North Saskatchewan Watershed Alliance (NSWA) on source (Aherne)
April 12, 2013	FarmOn	Outreach/engagement w/ International FarmOn Fdn about sustainability planning/PSSI, Bashaw (Aherne, Hanger)
April 15, 2013	AFRWC	Outreach/engagement w/ Board Chair, Alberta Federation of Rural Water Co-operatives (Hanger, Aherne)
April 2013	AWWOA	Collaborate in article preparation for *"Is Your Operation Ready for the Big Handoff?"* succession article
April 19, 2013	RADF	RADF Spring Showcase 2013 sessions; invited panelist for Education panel briefing (Aherne, Hanger)
May 8, 2013	AB Munis	Second mailing of *Taking Care of Your Drinking Water & Wastewater: A Guide for Member of Local…*
May 10, 2013	MULTI	Multi-stakeholder exploration w/ legal counsel of Operational Assistance boundaries (Voyer, Aherne)
May 10, 2013	ATAP	Receive briefing on Saskatchewan Northern Municipal Trust Account model (A. Stevenson & colleagues)
May 22, 2013	Hydromantis	SimuWorks demonstration for Wastewater Operations front-line leaders (Hanger, Aherne)
June 2013	WCW	C2H Initiative update – Summer 2013 special HR theme issue of *Western Canada Water* magazine http://wcwwa.ca/documents/2013/05/2013-summer-wcw.pdf

APPENDIX B – STRATEGIC COMMUNICATIONS, OUTREACH AND ENGAGEMENT

TIMING	AGENGY	DESCRIPTION
June 2013	AWES	Engage with project manager for Literacy & Essential Skills (LES) in rural public works (Aherne/Hanger)
June 27, 2013	CWS	Canadian Water Summit – Calgary (Aherne)
July 4, 2013	Grande Cache	Outreach/engagement w/ Town of Grande Cache to explore Community Capacity model approach (Aherne)
July 5, 2013	LSCC	Briefing/exploratory meeting w/ Land Stewardship Centre, Alberta Lake Management Society, Cows & Fish
July 17, 2013	EWMCE	Working session to review *Coaching for Operators* (CFO) evaluation information/continuous improvement
July 29, 2013	Water Canada	C2H Initiative update nationally syndicated in Water Canada magazine online– *The Droplet* blog http://watercanada.net/2013/closer-to-home-initiative-update/
August 14, 2013	Assoc Eng.	½ day intervention review of Drinking Water Safety Plan (DWSP) Area Cohort development
September 2013	CSC/MZP	National full-page print ad in Canadian School Counsellor (CSC) "Back-to-School" issue/500 DVDs insert in AB
September 20, 2013	WCW	C2H Initiative briefing/Workforce Development briefing (w/ T. Anderson) (Aherne, Hanger)
September 25, 2013	Aquatera	Hrudey ½ day session on assuring safe drinking water at Water Week North 2013, Grande Prairie
September 25, 2013	Aquatera	*Getting on the Right Track with Water & Wastewater* plenary briefings for NW Alberta (Lang, McRory, Davidson)
September 25, 2013	GPRC	*Safe Drinking Water Doesn't Happen by Accident* public talk on Walkerton Water Tragedy, Grande Prairie, Fairview
September 26, 2013	NLC	*From Infamy to Excellence: Learning from the Walkerton Tragedy* and post-disaster renewal panel, Slave Lake
September 27, 2013	Town of Black Diamond	*Getting on the Right Track with Water & Wastewater* briefings for Southern Alberta (Lang, McRory, Davidson)
September 27, 2013		By-invitation briefing and issue exploration post-flood with Quad Region Partnership (Hanger, Aherne)
October 3, 2013	AUSF	By-invitation briefing for Alberta Utility Stakeholders Forum (Red Deer) (Voyer, Aherne)
October 23, 2013	RADF	Working session with Howard Research (Dr. Peggy Howard) & Adam Walker (RADF Project Manager)

APPENDIX B – STRATEGIC COMMUNICATIONS, OUTREACH AND ENGAGEMENT

TIMING	AGENGY	DESCRIPTION
October 7, 2013	ARDN	*ARDN One* showcase and stakeholder engagement event, Leduc (Hanger, Aherne)
November 2013	Careering/MZP	National full-page print ad in Careering trade magazine serving 14,000 Canadian career professionals
November 12, 2013	AMSA	Workshop Leader – Public Works Workforce Development key issues (Aherne)
November 19, 2013	AUMA pre-con	*Lessons from Walkerton Water Tragedy* extension visitorship session, Calgary (Davidson, Aherne)
November 20, 2013	Red Deer, City	*Lessons from Walkerton Water Tragedy* extension visitorship session, Red Deer (Davidson, Aherne)
November 21, 2013	Red Deer City Rockyview Co.	*Lessons from Walkerton Water Tragedy* extension visitorship session, Red Deer, Calgary (Davidson, Aherne)
November 22, 2013	AESRD	*Lessons from Walkerton Water Tragedy* extension visitorship session, Edmonton (Davidson, Aherne, Voyer)
November 26, 2013	NLC	Two *Lessons from Walkerton Water Tragedy* extension visitorship sessions, High Prairie (Davidson, Aherne)
November 27, 2013	NLC	Debrief Northern Lakes Colleges representatives on *Sustaining a Local Water Service* sub-project (Aherne)
November 28, 2013	Portage College	Two *Lessons from Walkerton Water Tragedy* extension visitorship sessions, Lac La Biche (Davidson, Aherne)
November 29, 2013	NAIT	Tour of NAIT Water/Wastewater Lab; *Lessons from Walkerton Water Tragedy* talk, Edmonton, Calgary campuses
December 5, 2013		C2H Initiative stakeholder evaluation debrief teleconference/webinar (Hanger, Voyer, Lang, McRory, Aherne)
March 2014	AWWOA AOS	Aquatera Utilities Inc/EWMCE – Technical Session on Coaching for Operators lessons
March 2014	AWWOA AOS	First Nations (Alberta) TSAG Circuit Riders – Technical Session on remote monitoring/*eCRTPa* rollout
March 2014	AWWOA AUO	Associated Engineering/Town of High River/Town of Slave Lake – Article on disaster recovery peer-support
Spring 2014	AFRWC	Strategic communication with Government of Alberta about lessons learned/emergent issues with co-ops

APPENDIX B – STRATEGIC COMMUNICATIONS, OUTREACH AND ENGAGEMENT

PROJECT GOVERNANCE RELATED MEETINGS AND INTERVENTIONS

PROJECT ADVISORY COUNCIL (PAC) - NETWORK GOVERNANCE OVERSIGHT AND ADVISORY DIRECTION

PAC Commissioning Meeting – June 26, 2012
PAC Meeting No. 1 - September 05, 2012
PAC Meeting No. 2- December 05, 2012
PAC Meeting No. 3 - April 24, 2013
PAC Meeting No. 4 -June 26, 2013
PAC Meeting No. 5 - September 25, 2013
PAC Meeting No. 6 [Close Out Event with Stakeholders] – December 05, 2013
PAC Meeting No. 7 - January 30, 2014 [Project Report Debriefing & Completion of Service]

PROJECT EXECUTIVE GROUP (PEG) – PROGRAM AND RADF CONTRACT MANAGEMENT MEETINGS

PEG Meeting No. 1 - October 17, 2012
PEG Meeting No. 2 - November 14, 2012
PEG Meeting No. 3 - February 28, 2013
PEG Meeting No. 4 - March 27, 2013
PEG Meeting No. 5 - April 17, 2013
PEG Meeting No. 6 - May 23, 2013
PEG Meeting No. 7 - June 20, 2013
PEG Meeting No. 8 - July 18, 2013
PEG Meeting No. 9 - August 15, 2013
PEG Meeting No. 10 - September 16, 2013
PEG Meeting No. 11 - October 24, 2013
PEG Meeting No. 12 - November 14, 2013
PEG Meeting No. 13 - December 30, 2013
PEG Meeting No. 14 – January 28, 2014 [Project Report Consideration and Project Close Out]

AWWOA SPECIAL MEETING OF THE EXECUTIVE BOARD TO CONSIDER MATTERS OF ALBERTA INTELLECTUAL PROPERTY LEGACIES AND COURSE AND MATERIALS RE/DEVELOPMENT

October 4, 2012

AWWOA TRAINING COMMITTEE MEETINGS TO ENABLE COMPLETION OF C2H INITIATIVE-RELATED PROGRAM OF WORK

October 04, 2011
August 22, 2012
November 01, 2012
December 13, 2012
January 24, 2013
February 14, 2013
April 11, 2013
May 9, 2013
June 13, 2013
August 8, 2013
September 12, 2013
October 10, 2013
November 14, 2013
December 12, 2013

APPENDIX B – STRATEGIC COMMUNICATIONS, OUTREACH AND ENGAGEMENT

PROJECT ADVISORY COUNCIL (June 2012 - December 31, 2013)
Kathy Abramowski, Alberta Environment and Sustainable Resource Development
Enayat Aminzadah, Community Learning Network (until April 2013)
Tasha Blumenthal, Alberta Association of Municipal Districts and Counties (AAMDC)
Rachel Bocock, Alberta Urban Municipalities Association (AUMA)
Brian Brost, Co-Chair, PAC & PEG; Alberta Water & Wastewater Operators Association (AWWOA)
Garth Carl, Co-Chair, PAC & PEG; Alberta Water & Wastewater Operators Association (AWWOA)
Winslow Davis, First Nations (Alberta) Technical Services Advisory Group, Circuit Rider Training Program (CRTP)
Kim Fath, Alberta Water & Wastewater Operators Association (AWWOA)
Dr. Lars Halström, Alberta Centre for Sustainable Rural Communities, University of Alberta
Aaron Janzen, P.Eng., Alberta Environment and Sustainable Resource Development (September 2012 - June 2013)
Terence Ko, P.Eng., Alberta Environment and Sustainable Resource Development (June 2013 – December 2013)
Nancy McAteer, Alberta Water & Wastewater Operators Association (AWWOA)
John Voyer, Alberta Water & Wastewater Operators Association (AWWOA); RADF Designated Project Manager for C2H Initiative

PROJECT EXECUTIVE GROUP (PEG)
Brian Brost, Past-Chair (AWWOA), 2012-13; AWWOA ad hoc Rural Development Committee (to March 12); C2H Initiative co-founder
Garth Carl*, Past-Chair (AWWOA), 2013-14; AWWOA ad hoc Rural Development Committee (to March 12) *effective March 2013
John Voyer, Executive Director (AWWOA) & RADF Designated Project Manager; C2H Initiative co-founder
Michael Aherne, Managing Director, Responsive Strategies Inc; contracted AWWOA Executive Advisor, Workforce Development & C2H Initiative co-founder
Jeffrey Hanger, C2H Initiative Project Associate (non-voting Recording Secretary)

APPENDIX B – STRATEGIC COMMUNICATIONS, OUTREACH AND ENGAGEMENT

Acronym	Full Name	Website
AAMDC	Alberta Association of Municipal Districts and Counties	www.aamdc.com
AEMA	Alberta Emergency Management Agency	www.aema.alberta.ca
AFRWA	Alberta Federation of Rural Water Co-ops Ltd.	www.abwaterco-op.com
AMSA	Alberta Municipal Supervisors Association	www.amsapw.ca
Aquatera	Aquatera Utilities Inc. (Grande Prairie, Grande Prairie Co, Sexsmith)	www.aquatera.ca
ARDN	Alberta Rural Development Network	www.ardn.ca
ARMAA	Alberta Rural Municipal Administrators Association	www.armaa.ca
ACSRC	Alberta Centre for Sustainable Rural Communities, University of Alberta	www.augustana.ualberta.ca/centres/acsrc
ATAP	ATAP Infrastructure Management Ltd.	www.atap.ca
AUSF	Alberta Utility Stakeholders Forum	n/a
AUMA	Alberta Urban Municipalities Association	www.auma.ca
AWES	Alberta Workforce Essential Skills Society	www.awes.ca
AWP	Alberta Watershed Toolkit Project	www.watershedresources.ca
AWWOA	Alberta Water & Wastewater Operators Association	www.awwoa.ca
CLN	Community Learning Network	www.communitylearning.info
CWN	Canadian Water Network	www.cwn-rce.ca
CWWA	Canadian Water and Wastewater Association	www.cwwa.ca
ESRD	Alberta Environment & Sustainable Resource Development	www.environment.alberta.ca
EWMCE	Edmonton Waste Management Centre of Excellence	www.ewmce.com
GPRC	Grande Prairie Regional College	www.gprc.ab.ca
LGAA	Local Government Administration Association – Alberta Chapter	www.lgaa.ab.ca
LSCC	Land Stewardship Centre of Canada	www.landstewardship.org
Muni Affairs	Alberta Municipal Affairs	www.municipalaffairs.alberta.ca
MSGC	Métis Settlements General Council, Strategic Training Society	www.msgc.ca
NADC	Northern Alberta Development Council	www.nadc.gov.ab.ca
NLC	Northern Lakes College	www.northernlakescollege.ca
NSWA	North Saskatchewan Watershed Alliance	www.nswa.ab.ca
RADF	Rural Alberta's Development Fund	www.radf.ca
TSAG	First Nations (Alberta) Technical Services Advisory Group	www.tsag.net
WCW	Western Canada Water (Association)	www.wcwwa.ca

APPENDIX C
Verified Cohort Engagement by Municipality/Community

APPENDIX C - Verified Cohort Engagement by Municipality/Community (to Dec 31/2013)

Drinking Water Safety Plan (DWSP) Completion Session – Cohort Distributed Learning

COHORT	AREA OF PROVINCE		MUNICIPALITY, REGULATED CO-OPERATIVE, OR REGIONAL COMMISSION
Cohort One (2013-01)	**Calgary & Area** (includes water co-operatives)	*1*	Town of High River *(interrupted by June '13 flood)*
		2	Town of Banff
		3	Town of Langdon
		4	Cottonwood Estates Water Co-operative
		5	Hill Spring Meadows Water Co-operative
		6	George/ Delrich Water Co-operative
		7	Mount Vista Estates Waterworks System
		8	Mountain River Estates Water Co-op
		9	Big Hill Creek Estates
		10	Ravencrest Water Co-operative
Cohort Two (2013-02)	**Grande Prairie & Area**	*11*	Village of Hines Creek
		12	Town of Beaverlodge
		13	Town of Wembley
		14	Village of Rycroft
		15	Village of Hythe
		16	City Grande Prairie, Aquatera
		17	Municipal District Greenview
		18	Town of Peace River
		19	Town of Grande Cache
		20	County of Grand Prairie
Cohort Three (2013-03)	**Slave Lake & Area**	*21*	Municipal District of Big Lakes (Kinuso)
		22	Municipal District of Big Lakes (Faust)
		23	Municipal District of Big Lakes (Joussard)
		24	Municipal District of Big Lakes (Enilda)
		25	Municipal District of Big Lakes (Grouard)
		26	Town of High Prairie
		27	East Prairie Metis Settlement
		28	Town of Fox Creek
		29	Municipal District of Opportunity (Wabasca)
		30	Town of Whitecourt
		31	Municipal District of Opportunity (Red Earth Creek)
		32	Gift Lake Metis Settlement
		33	Peavine Metis Settlement
		34	Municipal District of Opportunity (Calling Lake)

COHORT	AREA OF PROVINCE		MUNICIPALITY, REGULATED CO-OPERATIVE, OR REGIONAL COMMISSION
Cohort Four (2013-04)	**Flagstaff County Area municipalities**	*35*	Municipal District of Wainwright
		36	Town of Killam
		37	Town of Sedgewick
		38	Village of Strome
		39	Village of Heisler
		40	County Paintearth
		41	Town of Coronation
		42	Village of Galahad
		43	Village of Forestburg
		44	Town of Daysland
		45	Town of Hardisty
		46	Village of Lougheed
Cohort Five (2013-05)	**Red Deer & Area** (conducted in Penhold)	*47*	Village of Delburne
		48	Town of Penhold
		49	Town of Eckville
		50	Town of Rimbey
		51	Town of Bentley
		52	Village of Elnora
		53	City of Red Deer
		54	Town of Three Hills
		55	Village of Caroline
Cohort Six (2013-06)	**Municipal District of Provost area municipalities**	*56*	Village of Edgerton
		57	Village of Chauvin
		58	Village of Irma
		59	Municipal District of Provost
		60	Town of Provost
		61	Village of Amisk
		62	Village of Hughenden
Cohort Seven (2013-07)	**North Saskatchewan River Basin (East of Edmonton)** (conducted in St. Paul)	*63*	Village of Vilna
		64	Town of St. Paul
		65	City of Cold Lake
		66	Elinor Lake Resort, Lac La Biche County
		67	Village of Myrnam
		68	Smoky Lake County
		69	City of Lloydminster
		70	Town of Bonnyville
		71	County of Two Hills
		72	Westwind RV Park, Athabasca

COHORT	AREA OF PROVINCE		MUNICIPALITY, REGULATED CO-OPERATIVE, OR REGIONAL COMMISSION
Cohort Eight (2013-08)	**North Saskatchewan River Basin (West of Edmonton)** (conducted in Drayton Valley)	*73*	Town of Rocky Mountain House
		74	Town of Westlock
		75	Town of Drayton Valley
		76	Parkland County
		77	Clearwater County
		78	Hamlet of Nordegg
		79	Village of Warburg
		80	Village of Thorsby
		81	Village of Breton
		82	Brazeau County
		83	Trestle Creek Golf Resort
		84	Leduc County
Cohort Nine (2013-09)	**Vulcan County**	*85*	Village of Milo
		86	County of Lethbridge Rural Water Assoc
		87	Village of Champion
		88	Village of Carmangay
		89	Town of Milk River
		90	Town of Pincher Creek
		91	Village of Arrowood
Cohort Ten (2013-10)	**High Level & Mackenzie County Area**	*92*	Town of High Level
		93	Town of Manning
		94	Town of Rainbow Lake
		95	Footner Lake, Mackenzie County
		96	Town of Garden River
		97	County Northern Lights
		98	La Crete, Mackenzie County
		99	Zama, Mackenzie County
		100	Fort Vermillion, Mackenzie County
		101	Jean D'Or Prairie, Little Red River Cree Nation
Cohort Eleven (2013-11)	**MD Wood Buffalo area**	*102*	Municipality of Wood Buffalo
		103	City of Fort McMurray
		104	Hamlet of Fort MacKay
		105	Hamlet of Fort Chipewyan
		106	Hamlet of Conklin
		107	Hamlet of Anzac
		108	Hamlet of Janvier

COHORT	AREA OF PROVINCE		MUNICIPALITY, REGULATED CO-OPERATIVE, OR REGIONAL COMMISSION
Cohort Twelve (2013-12)	**Henry Kroeger Regional Water Services Commission partners** (Hanna & area)	*109*	Town of Hanna
		110	Village of Cereal
		111	Special Areas 2 & 3 Multiple Hamlets
		112	MD of Acadia (Village of Acadia Valley)
		113	Henry Kroeger RWS Commission
Cohort Thirteen (2013-13)	**EPCOR Rural Regional Partners** (Network Distribution)	*114*	City of Leduc
		115	City of St Albert
		116	Hwy 14 WSC
		117	Hwy 28/63 Thorhild County
		118	Village of Redwater
		119	Town of Bon Accord
		120	Village of Ferintosh
		121	Town of Ponoka
		122	Village of Viking
		123	Town of Tofield
		124	Village of Mannville
		125	Town of Vermilion
		126	Town of Beaumont
		127	Sturgeon County
		128	Parkland County
		129	Town of Morinville
Cohort Fourteen (2013-14)	**High River & Area** (June '13 flood response contingency for DWSP)	*N/A*	Town of High River (reported as 01 in 2013-01)
		130	Wheatland County
		131	Municipal District of Foothills No. 31
		131	**Total Rural Municipalities, Co-operatives, or Regional Commissions Participating in an Area Cohort to December 31, 2013**

APPENDIX D
Engagement profile by Alberta rural community

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Acadia Valley, Hamlet of (MD of Acadia 134)	X	X		
Acme, Village of			X	
Alcomdale Local Development Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Alexander First Nation				eCRTPa
Alix, Village of			X	
Alliance, Village of		X		
Amisk,Village of	X			
Anzac, Hamlet of (MD of Wood Buffalo)	X			
Aquatera Utilities Inc. (municipal shareholder held by Grande Prairie, City of; Grande Prairie, County of; and Sexsmith, Town of)		X		2012 DACUM Key Informant; Walkerton Talks; Hrudey Casebook support via 2013 Water Week North ½ day session; public talk in partnership with GPRC/Fairview
Argentia Beach, Summer Village of		X		
Arrowwood, Village of	X			
Athabasca County		X		
Athabasca, Town of (for Aspen RWC)	X		X	
Banff, Town of	X		X	
Barrhead County		X		
Barrhead, Town of (Barrhead RWC)		X	X	2012 DACUM Key Informant; Hrudey Casebook Review
Bashaw, Town of			X	
Bearspaw Ridge Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Beaumont, Town of	X			
Beaverlodge, Town of	X		X	
Bentley, Town of	X		X	
Big Hill Creek Estates Co-op (Cochrane)	X			Co-op System Assess/Diagnostic
Big Horn [Nakoda (Stoney) First Nation]				eCRTPa
Bittern Lake, Village of		X		2012 DACUM Key Informant

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Black Diamond, Town of		X	X	Getting on Right Track (Sept 27/13); Quad Region Consultation (Sept 27/13)
Blood [Blood (Kainai) First Nation No. 148]				eCRTPa
Bon Accord, Town of	X		X	
Bonnyville, Town of	X		X	
Brazeau County	X			
Breton, Village of	X	X		
Brocket, Settlement of (in Peigan 147)			X	
Bruderheim, Town of			X	
Calgary, City of		X		2012 DACUM Key Informants; 2013 Task Analysis
Calling Lake, Hamlet of (MD of Opportunity 17)	X			Walkerton presentation
Camrose County		X		
Carbon, Village of		X		
Cardston, Town of		X	X	
Carmangay, Village of	X		X	
Caroline, Village of	X			
Castor, Town of			X	
Cereal, Village of	X			
Champion, Village of	X	X		
Chauvin, Village of	X			
Chestermere, Town of		X		
Chipman, Village of		X		
Claresholm, Town of			X	
Clearwater County	X	X		
Clive, Village of			X	
Coaldale, Town of		X		
Coalhurst, Town of			X	

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Cochrane, Town of	X			GWWA video case study/CTV2 PSA
Cold Lake, City of	X		X	
Conklin, Hamlet of (MD of Wood Buffalo)	X			
Coronation, Town of	X			
Cottonwood Estates (regulated waterworks)	X			
Coutts, Village of			X	
Cowley, Village of			X	
Crossfield, Town of			X	
Daysland, Town of	X		X	
Delburne, Village of	X			
Delia, Village of		X		
Devon, Town of				2012 DACUM Key Informant
Dewberry, Village of				GWWA video case study/CTV2 PSA; Consortia Coaching
Dewinton, Hamlet of (MD of Foothills No 31)			X	Walkerton Presentation (Nov 2013)
Didsbury, Town of			X	2012 DACUM Key Informants
Donnelly, Village of		X	X	
Drayton Valley, Town of	X	X		DACUM/TASK WS
Driftpile, Settlement of (Driftpile Cree Nation)			X	eCRTPa
Drumheller, Town of				2012 DACUM Key Informant; 2013 GoTRT (Sept 26/13); Coaching for Operators
East Peace Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
East Prairie Métis Settlment	X			
Eckville, Town of	X			
Eden Valley [Nakoda (Stoney) First Nation]				eCRTPa
Edgerton, Village of	X	X		
Elinor Lake Resort (Lac La Biche County)	X			
Elk Point, Town of			X	

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Elnora, Village of	X			
Enilda, Hamlet of (MD of Big Lakes)	X		X	
Enoch Cree First Nation				eCRTPa
Fairview, Town of			X	
Falher, Town of		X	X	
Faust, Hamlet of (MD of Big Lakes)	X			
Ferintosh, Village of	X			
Foothills No 31, Municipal District of	X			2013 Getting on Right Track (Sept 27/13); Quad Region Consultation (Sept 27/13)
Footner Lake, Settlement of (Mackenzie County)	X			
Foremost, Village of			X	
Forestburg, Village of	X	X	X	
Fort Chipewyan, Hamlet of (MD of Wood Buffalo)	X			
Fort Macleod, Town of			X	
Fort Mckay First Nation (MD of Wood Buffalo)	X			
Fort McMurray Special Hamlet (MD of Wood Buffalo)	X			
Fort Vermillion, Hamlet of (Mackenzie County)	X		X	
Fox Creek, Town of	X		X	
Fox Lake, Settlement of (Little Red River Cree Nation)				eCRTPa
Frog Lake First Nation			X	eCRTPa
Galahad, Village of	X		X	Consortia Development
Garden River, Community of (Little River Cree Nation)	X			
Georgian Del-Rich Utility Co-op (regulated waterworks)	X			
Gibbons, Town of			X	
Gift Lake Métis Settlement	X		X	Davidson talks
Girouxville, Village of		X		
Glendon, Village of			X	
Glenevis, Hamlet of (County of Lac Ste. Anne)			X	

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Glenwood, Village of			X	
Goodfish Lake (White Fish Lake First Nation 128)			X	
Grande Cache, Town of	X	X	X	DWSP/Coaching
Grande Prairie, County of	X	X		
Greenview, Municipal District of	X			
Grouard, Hamlet of (MD of Big Lakes)	X	X		
Hanna, Town of	X		X	GWWA video case study/CTV2 PSA
Hardisty, Town of	X			
Heart Lake First Nation				eCRTPa
Heisler, Village of	X			
Henry Kroeger RWS Commission *(serving approximately 35 communities in Special Areas 2/3 and region; but only counted once in the community count)*	X			DACUM & Task Analysis Key Informants; Coaching for Operators; GWWA video; Sampling video demonstration site
High Level, Town of	X			
High Prairie, Town of	X		X	Davidson talks
High River, Town of	X		X	Flood aftermath/DWSP custom
Highway 14 Regional Water Services Commission	X			
Highway 28/63 Regional Water Services Commission	X			
Hill Spring Meadow Co-op (regulated waterworks)	X			
Hines Creek, Village of	X	X	X	
Hinton, Town of			X	
Holden, Village of		X		
Horse Lake First Nation				eCRTPa
Hughenden, Village of	X			
Hussar, Village of		X		
Hythe, Village of	X			
Irma, Village of	X		X	
Janvier, Hamlet of (MD of Wood Buffalo)	X			

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
John D'Or Prairie, Settlement of Little Red River…				
Josephburg Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Joussard, Hamlet of (MD of Big Lakes)	X			
Kapawe'no Narrows (Kapawe'no First Nation)				eCRTPa
Keg River, Community of (County of Northern Lights)			X	
Kehewin Cree Nation				eCRTPa
Kikino Métis Settlement			X	
Killam, Town of	X		X	
Kinuso, Hamlet of (MD of Big Lakes)	X			
Kitscoty, Village of		X		GWWA video case study/CTV2 PSA; Consortia coaching
Kneehill County		X		
Lac La Biche, Hamlet of (County of LLB)			X	Davidson
Lacombe County		X		
LaCrete, Hamlet of (Mackenzie County)	X			
Langon, Hamlet of (Rocky View County)	X		X	
Leduc County	X			
Leduc, City of	X			Task Analysis
Legal, Town of		X	X	
Lesser Slave River, Municipal District 124		X		DACUM (Water Treatment) KI; SAWS; Disaster Recovery panel (Sept 26/2013)
Lethbridge, City of		X		
Lethbridge, County of		X		
Lethbridge, County of Rural Water Association [regulated]	X			
Levin [Blood (Kainai) First Nation No. 148]				eCRTPa
Lloydminster, City of	X			Voluntary DWSP completion
Lougheed, Village of		X		
Louis Bull Tribe				eCRTPa

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Magrath, Town of	X	X	X	
Manning, Town of	X	X	X	
Mannville, Village of	X	X		
Marwayne, Village of		X		GWWA video case study/CTV2 PSA; Consortia Coaching
McLennan, Town of		X		
Meander River (Dene Tha' First Nation)				eCRTPa
Milk River, Town of	X		X	
Milo, Village of	X	X		
Minburn, County of		X		
Morinville, Town of	X	X		
Mount Vista Estates Co-op (regulated waterworks)	X			
Mountain River Estates Co-op (regulated waterworks)	X			Co-op System Assess/Diagnostic
Myrnam, Village of	X			Consortia advisory
Nanton, Town of			X	
New Norway, Hamlet of (Camrose County)			X	
Newell, County of		X		Task Analysis
Nobleford, Village of			X	
Nordegg, Hamlet of (Clearwater County)	X			
Northern Lights No. 22, County of	X	X		
Northern Lights Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Northern Sunrise County (NEW Water Limited)				Task Analysis
O'Chiese First Nation				eCRTPa
Okotoks, Town of				2012 DACUM Key Informant
Old Agency [Blood (Kainai) First Nation No. 148]				eCRTPa
Olds, Town of		X		WWA – IS; GWWA video case study/CTV2 PSA
Opportunity No. 17, Municipal District of	X		X	

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Paddle Prairie Métis Settlement				Custom community support for DWSP
Paintearth, County of	X			
Parkland County	X			
Paul First Nation				eCRTPa
Peace River, Town of			X	2012 DACUM Key Informant; Hrudey Casebook Review
Peace, Municipal District of		X		
Peavine Métis Settlement	X			Walkerton Talks (Nov 2013)
Penhold, Town of	X	X	X	
Piikani First Nation				eCRTPa
Pincher Creek, Town of	X	X	X	
Ponoka, Town of	X		X	
Priddis Greens Services Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Provost, Municipal District of	X			
Provost, Town of	X			
Rainbow Lake, Town of	X			
Ravencrest Village co-op (regulated waterworks)	X			
Raymond, Town of		X		
Red Deer, City of	X	X		2012 DACUM/2013 Task Analysis KIs; Walkerton Talks (Nov 2013)
Red Earth Creek, Hamlet of (MD of Opportunity)	X		X	Walkerton Talks
Redwater, Town of	X			
Rimbey, Town of	X		X	
River Country Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Rocky Mountain House, Town of	X	X		
Rocky View County		X		Walkerton Talks
Roseridge Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Rycroft, Village of	X			Operator Coaching

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Saddle Lake Cree Nation				eCRTPa
Sedgewick, Town of	X			Operator Consortia development
Siksika East - First Nation				eCRTPa
Silver Willow Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Slave Lake, Town of			X	SAWS;
Smoky Lake, County of	X			
Smoky Lake, Town of			X	
Smoky River, MD of (Regional Water Commission)		X		
South East Alberta Water Co-op Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Special Areas No 2/No 3 (multiple hamlets)	X			
Spedden, Hamlet of (County of Smoky Lake)			X	
Spirit River, Town of			X	
Sputinow, Community of (MD of Bonnyville)			X	
St. Albert, City of	X			Hrudey Casebook Review
St. Mary [Blood (Kainai) First Nation No. 148]				eCRTPa
St. Paul [Blood (Kainai) First Nation No. 148]				eCRTPa
St. Paul, County of		X		
St. Paul, Town of	X			
Standard, Village of		X		
Stavely, Town of		X		
Stirling, Village of			X	
Stoney [Nakoda (Stoney) First Nation]				eCRTPa
Strathcona County		X		2012 DACUM Key Informant; Hrudey Casebook Review
Strome, Village of	X			Operator Consortia development
Sturgeon County	X			
Sunchild Cree First Nation No. 202				eCRTPa
Sundre, Town of		X	X	

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Swan Hills, Town of			X	
Swan River (Kinuso)				eCRTPa
Sylvan Lake, Town of		X		
Taber, Town of		X		
Thorhild County	X			
Thorsby, Village of	X		X	
Three Hills, Town of	X	X		
Tofield, Town of	X			
Trestle Creek Resort (regulated waterworks)	X			
Trochu, Town of			X	
Tsuu T'ina First Nation No. 145				eCRTPa
Turner Valley, Town of		X		Getting on Right Track (Sept 27/2013); Quad Region Consultation (Sept 27/13)
Two Hills, County of	X			
Two Hills, Town of			X	
Valleyview, Town of			X	
Vauxhall, Town of			X	
Vermilion, Town of	X			
Viking, Town of	X		X	
Vilna, Village of	X	X		
Vulcan, Town of			X	
Wabasca-Demarais, Settlements of (MD of Opportunity)	X			
Wainwright, Municipal District of	X	X		
Warburg, Village of	X			
Wembley, Town of	X	X	X	
Westlock, Town of	X			
Westwind RV Park [Athabasca] (regulated waterworks)	X			
Wetaskiwin, City of			X	

APPENDIX D - Closer to Home (C2H) Initiative – Engagement Profile by Rural Community (or County/MD)

Community Name (& county/MD if hamlet)	DWSP Completion Session	Monthly Outreach Education	AWWOA Training Subsidy	Tailored Community Development or Other Engagement Intervention
Wheatland County	X			
Whitecourt, Town of	X		X	
Wintergreen Woods Water Utility Ltd (regulated waterworks)				Co-op System Assess/Diagnostic
Wood Buffalo, Municipal District of	X	X		
Worsley, Hamlet of (Clear Hills County)			X	
Wrentham Water Users Association (regulated waterworks)				Co-op System Assess/Diagnostic
Zama City, Hamlet of (Mackenzie County)	X			

APPENDIX E

WaterWise Alberta Information Session Summary & Podcast Access by Month

APPENDIX E

WaterWise Alberta Information Session Summary & Podcast Access by Month

Month	Governance, Oversight or Management Subject*	Municipalities (inc counties, MDs, related organizations)	** Known Participants
Nov 2012	**Basic Awareness of Local Officials Responsibilities** http://tinyurl.com/kwlo3o8 ***	5	18
Dec 2012	**Recap of Basic Awareness. Municipal Water: What's in it for me?** http://tinyurl.com/n93cz8r	4	14
Jan 2013	**Operational Certification & Other Considerations**	25	57
Feb 2013	**Drinking Water Safety Plans (DWSP)**	24	60
March 2013	**Alberta's Approach to Drinking Water Regulation**	14	35
April 2013	**Municipal Wastewater Compliance & Oversight**	26	52
May 2013	**Local Water & wastewater Operations and Your Operators' Duties** http://tinyurl.com/kzbq8mr	15	30
June 2013	**Planning for Sustainable Local Waterworks Utilities- FCA** http://tinyurl.com/kd4f8dr	18	47
July 2013	**Sensible Innovations for Smaller Alberta Communities** http://tinyurl.com/kk5zhb9	16	40
Aug 2013	**Municipal Council Candidates. Water & Wastewater: Do you know what you are getting into?** http://tinyurl.com/k8hjtrc	22	39
Sept 2013	**Public Health & Water: Municipal Oversight & Issues** http://tinyurl.com/meqk9zn	13	29
Oct 2013	**Watershed Protection & Management: Role of Your Municipality** http://tinyurl.com/kxr7ncb	10	39
Nov 2013	**Now You're Elected: Water & Wastewater Considerations for Officials** http://tinyurl.com/mhjvarm	10	23
	Total Known Participant Contact Hours for Provincial Monthly Outreach Education		**483**

* Professional Engineer Pat Lang, former long-service director of the Government of Alberta's, Drinking Water Program provided continuity and knowledge brokerage across all *WaterWise Alberta* Information Sessions.

** Field reports indicate that many local community 'sites' had more actual participants than Known Participants. Known Participants reflect an actual audioconference or Adobe Connect webinar point of connection. Several local participants access a single point of connection of a Known Participant, As such actual participation of individuals at the community-level is under-reported.

*** Location of archival podcast where content has been copyright cleared/released and made available at www.archive.org

APPENDIX F
Verified Municipal Engagement in Monthly Outreach Education

APPENDIX F - Verified Municipal Engagement in Monthly Outreach Education

C2H Initiative - WaterWise Alberta Information Sessions Municipal Engagement (Nov 2012 – Nov 2013)

	Municipality	Sessions
1	**Acadia Valley**, Municipal District of	**2**
2	**Alliance**, Village of	**1**
3	**Argentia Beach**, SV of Pigeon Lake	**10**
4	**Athabasca County**	**5**
5	**Athabasca**, Town of (Aspen RWC)	**3**
6	**Barrhead**, Town of	**3**
7	**Barrhead**, County	**5**
8	**Bashaw**, Town of	**2**
9	**Bittern Lake**, Village of	**1**
10	**Black Diamond**, Town of	**12**
11	**Breton**, Village of	**1**
12	**Calgary**, City of (November 2013 only)	**1**
13	**Camrose County**	**1**
14	**Carbon**, Village of	**1**
15	**Cardston**, Town of	**2**
16	**Champion**, Village of	**3**
17	**Chestermere**, Town of	**6**
18	**Chipman**, Village of	**2**
19	**Clearwater County**	**1**
20	**Cochrane**, Town of	**2**
21	**Coaldale**, Town of	**1**
22	**Delia**, Village of	**1**
23	**Donnelly**, Village of	**6**
24	**Drayton Valley**, Town of	**2**
25	**Edgerton**, Village of	**9**
26	**Falher**, Town of	**5**
27	**Forestburg**, Village of	**1**
28	**Girouxville**, Village of	**2**
29	**Grande Cache**, Town of	**1**
30	**Grande Prairie**, County of	**11**
31	**Hardisty**, Town of	**1**
32	**Hines Creek**, Village of	**10**
33	**Holden**, Village of	**2**
34	**Hussar**, Village of	**8**
35	**Kitscoty**, Village of	**2**
36	**Kneehill County**	**1**
37	**Lacombe**, County of	**1**
38	**Legal**, Town of	**3**
39	**Lethbridge**, City of	**1**
40	**Lethbridge**, County of	**3**
41	**Lougheed**, Village of	**1**
42	**Magrath**, Town of	**2**
43	**Manning**, Town of	**1**
44	**Mannville**, Village of	**6**
45	**Marwayne**, Village of	**2**
46	**McLennan**, Town of	**2**
47	**Milo**, Village of	**2**
48	**Morinville**, Town of	**1**
49	**Newell,** County of	**1**
50	**Northern Lights**, County of	**2**
51	**Olds**, Town of	**4**
52	**Peace**, Municipal District of	**1**
53	**Penhold**, Town of	**1**
54	**Pincher Creek**, Municipal District of	**10**
55	**Raymond**, Town of	**1**
56	**Red Deer**, City of	**3**
57	**Rocky Mountain House**, Town of	**2**
58	**Rocky View County**	**1**
59	**Smoky Lake County**	**1**
60	**Smoky River**, MD of	**5**
61	**St Paul**, County of	**1**
62	**Standard**, Village of	**1**
63	**Stavely**, Town of	**2**
64	**Strathcona County**	**1**
65	**Sturgeon County**	**1**
66	**Sundre**, Town of	**1**
67	**Sylvan Lake**, Town of	**1**
68	**Taber**, Town of	**1**
69	**Three Hills**, Town of	**1**
70	**Turner Valley**, Town of	**1**
71	**Vilna**, Village of	**5**
72	**Wainwright**, Municipal District of	**1**
73	**Wembley**, Village of	**1**
74	**Wood Buffalo**, Regional Municipality of	**1**
	***Verified* Municipalities - all sessions**	***203***
	***Known* Participants attending**	***483***

APPENDIX G
Inventory of Task Statements developed under Sub-project Five

APPENDIX G
INVENTORY OF TASK STATEMENTS DEVELOPED UNDER SUB-PROJECT FIVE

INTRODUCTION

Persons engaged in activities of operating water and wastewater facilities are regulated in the province of Alberta and provide an essential service through critical infrastructures that are a cornerstone of modern public health and environmental protection systems. There is an inherent technical aspect to the design, undertaking, and assessment of water and wastewater operations work. The *Canadian Vocational Association* (CVA), as one of Canada's oldest and most respected technical training leadership organizations, adheres to a set of generally-accepted approaches to needs assessment with robust accountability. These include the *Developing a Curriculum* (DACUM) methodology as well as the *Systematic Curriculum and Instructional Development* (SCID) approach. The CVA generally-accepted practices were incorporated as part of the instructional systems design model the AWWOA Executive Board adopted as Board policy in late 2012, through a customized *Course and Materials Re/Development Model* that integrated the Association's governance context with a modification of the *ADDIE* (Analysis, Design, Develop, Implement, Evaluate) instructional design approach.

Background - In June 2011, members of the AWWOA ad hoc *Rural Development Committee* (RDC) convened in Penhold to consider the Association courses that they wished to see re-developed in a way that was aligned with the rural development and retention design of *C2H Initiative*. The AWWOA *Rural Development Committee* identified a mix of existing and new courses. Following implementation of *C2H Initiative* in early 2012, early efforts were undertaken through DACUM workshops to establish a descriptive profile and current-practice 'snap shot' of the *Major Areas of Responsibility* and *Major Tasks* involved in the four regulated disciplines of water and wastewater operator work in Alberta. The outcome was a series of four DACUM profiles that were released with draft status to participants, and to employers through participants, in March 2012. Following adoption of the AWWOA *Course and Materials Re/Development Model* in October 2012, an advisory team was assembled to consider the *Major Areas of Responsibility* and *Major Tasks* for further Job Task Analysis. In December 2012 and early January 2013, some 700 Tasks of water and wastewater operators were identified.

In addition to the original tasks of the DACUM working groups, additional tasks specific to rural wastewater operations in lagoons as well as additional Disinfection tasks were identified. A matrix of decision-making took place among a contracted advisory group working in two rounds of Job Task Analysis with many of Alberta's most experienced water and wastewater operators, operating specialists, and regulatory officials. From the original pool of Major Tasks in the 2012 draft DACUM profiles, those that could be considered *Common* across disciplines were consolidated into a single common Task (e.g., health and safety; disinfection; compliance, administration, operational support; and support systems). Between mid-January 2013 and mid-June 2013 *Major Tasks* were analyzed by operator and operating specialist teams under the process guidance of a CVA accredited facilitator. *Major Tasks* were analyzed for their status as a practice or a procedure, indication of further hazard assessment requirements, the step-by-step component *Steps* inherent in the task as well as the general knowledge, observable skills, and personal attributes required to discharge the task. Additionally, the teams were asked to share additional insights and wisdom in an effort to codify otherwise difficult to access tacit knowledge associated with the task. Tasks have been coded in a 2 page PDF template and exist as the *2013 Task Library*, on deposit with the AWWOA at *C2H Initiative* conclusion. The completed Task Statements have served as one of four authority touchstones in the development/re-development of instructional modules detailed in Appendix H.

NOTICE TO USERS: The following inventory of 379 Task identifiers represents work completed in 2013 and should not be considered to be an exhaustive treatment of Operator tasks. These tasks represent the priority placed by teams on having certain Major Tasks analyzed in readiness for module development. The reader is directed to the AWWOA *Overview of 2013 Task Analysis Process* summary report for an analysis of Tasks to be analyzed as well as which Tasks were identified by teams to be re-assigned as *Steps* and incorporated within existing or new *Major Tasks* or *Areas of Responsibility*.

Major Area of Responsibility (Water Distribution)	Task Analyzed/Codified in a 2013 Task Statement
Monitor System Operation -	Observe physical area around water utilities for possible threats, harms, or impacts to system caused by external activities
Monitor System Operation -	Perform physical walkthrough of building
Monitor System Operation -	Monitor water flow and pressure
Monitor System Operation -	Monitor reservoir levels
Monitor System Operation -	Respond to distribution alarms
Monitor System Operation -	Monitor status of specific components on a day-to-day basis (e.g., valves open/closed, hydrants in/out of service)
Monitor System Operation -	Gather data from instrumentation (e.g., SCADA, manual, control boards and available records)
Monitor System Operation -	Maintain SCADA
Monitor System Operation -	Interpret instrumentation data to make decisions (e.g., SCADA)
Monitor System Operation -	Identify ways feeder mains affect your system
Monitor System Operation -	Determine when you need external services (e.g., vendors, equipment operators, Alberta ESRD, other system operators)
Monitor System Operation -	Initiate temporary water service
Monitor System Operation -	Employ hydraulic modelling to ensure volumes are maintained to system
Monitor System Operation -	Identify redundancies in system
Monitor Water Quality -	Perform continuous online monitoring
Monitor Water Quality -	Perform field tests with portable instruments
Monitor Water Quality -	Take periodic samples based on regulatory requirements
Monitor Water Quality -	Take bacteriological sample in a Distribution system
Monitor Water Quality -	Send samples to an accredited laboratory for testing
Monitor Water Quality -	Respond to public health authorities on Boil Water Advisories and Boil Water Orders
Maintain Distribution Reservoirs -	Ensure adequate water turnover
Maintain Distribution Reservoirs -	Ensure adequate quantities to meet demand
Maintain Distribution Reservoirs -	Secure reservoir
Maintain Distribution Reservoirs -	Maintain venting
Maintain Distribution Reservoirs -	Look for leaks
Maintain Distribution Reservoirs -	Clean reservoir
Maintain Distribution Reservoirs -	Oversee decommissioning of old reservoirs
Maintain Distribution Reservoirs -	Respond to icing conditions in a reservoir

Major Area of Responsibility (Water Distribution)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Distribution Reservoirs -	Test pressure on pressure/surge tanks
Maintain Distribution Reservoirs -	Ensure operation of reservoir flow metering
Maintain Pipes -	Inspect pipes for leak detection
Maintain Pipes -	Clean pipes
Maintain Pipes -	Locate below grade infrastructure
Maintain Pipes -	Respond to leaks and breaks
Maintain Pipes -	Conduct physical repair of below grade infrastructure
Maintain Pipes -	Replace pipes
Maintain Pipes -	Maintain constant positive pressure in a system to prevent infiltration of any contaminants
Maintain Pipes -	Maintain cathodic protection (pipes and valves)
Maintain Valves -	Locate valves
Maintain Valves -	Maintain valve casings (AKA 'key ways')
Maintain Valves -	Conduct valve surveys
Maintain Valves -	Test valves
Maintain Valves -	Repair/replace valves
Monitor Booster Station -	Check atmospheric conditions in booster station
Monitor Booster Station -	Perform observational checks (i.e., gauges, piping, pumps)
Monitor Booster Station -	Collect data from SCADA (pressures, flows, residuals, pump hours/status, building status)
Monitor Booster Station -	Record appropriate information
Monitor Booster Station -	Check security
Monitor Booster Station -	Check backup generator fuel tank level
Monitor Booster Station -	Start engine driven backup fire pumps on a routine basis (e.g., standby equipment)
Maintain Rechlorination Systems -	Ensure adequate supply and shelf life of certified chemicals (e.g., dry, liquid, etc.)
Maintain Rechlorination Systems -	Maintain dosage pump and additional components (e.g., tubing, foot valve, injection valves, etc.)
Maintain Rechlorination Systems -	Maintain cleanliness of chemical tank
Maintain Rechlorination Systems -	Monitor the quality of chlorine introduced into system
Maintain Rechlorination Systems -	Manage chlorine dosage by adjusting the pump electronically or manually
Maintain Below Grade Access Points -	Maintain below grade access points and equipment
Maintain Hydrants -	Ensure hydrants are operational
Maintain Hydrants -	Service hydrants
Maintain Hydrants -	Replace hydrants

Major Area of Responsibility (Water Distribution)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Hydrants -	Educate stakeholders about hydrant obstruction
Maintain Meters (e.g., Consumption, Flow) -	Install meters
Maintain Meters (e.g., Consumption, Flow) -	Read meters
Maintain Meters (e.g., Consumption, Flow) -	Check meters
Maintain Meters (e.g., Consumption, Flow) -	Calibrate meters
Maintain Meters (e.g., Consumption, Flow) -	Rebuild meters
Maintain Meters (e.g., Consumption, Flow) -	Replace meters
Maintain Meters (e.g., Consumption, Flow) -	Maintain inventory of parts
Maintain Meters (e.g., Consumption, Flow) -	Disconnect service for non-payment
Restore Repaired Underground Site/Area -	Restore repaired underground site area to 'as was' or better condition
Collaborate with Stakeholders -	Participate in developing Drinking Water Safety Plan
Perform General Housekeeping Duties -	Maintain security systems

Major Area of Responsibility (Water Supply & Treatment)	Task Analyzed/Codified in a 2013 Task Statement
Operate Facility -	Verify that supervisory control and data acquisition and actual data correlate
Operate Facility -	Collect samples
Operate Facility -	Preserve samples
Operate Facility -	Perform in house laboratory analysis
Operate Facility -	Take readings
Operate Facility -	Perform facility rounds
Operate Facility -	Complete equipment checks
Operate Facility -	Fill chemical feed systems (e.g., day tanks, dry hoppers, barrels, totes, cylinders)
Operate Facility -	Prepare chemical batches
Operate Facility -	Maintain legible log books
Operate Facility -	Identify operator-initiated process tasks
Operate Facility -	Calculate daily facility data (e.g., flow rates, flow volumes, chemical doses, chemical volumes)
Operate Facility -	Maintain work schedule
Operate Facility -	Manage waste residuals/streams
Operate Facility -	Perform housekeeping

Major Area of Responsibility (Water Supply & Treatment)	Task Analyzed/Codified in a 2013 Task Statement
Operate Facility -	Confirm chemical feed system calibration
Operate Facility -	Maintain accurate and legible records
Operate Facility -	Test stand-by equipment (e.g., generators, pumps, motors)
Operate Facility -	Perform chemical receiving, handling and storage
Operate Facility -	Forecast plant production requirements
Operate Facility -	Manage raw water supply and intake
Perform Process Control -	Interpret facility data
Perform Process Control -	Interpret laboratory test results
Perform Process Control -	Review trending/historical data to assist in treatment process
Perform Process Control -	Adjust equipment to optimize performance
Perform Process Control -	Ensure all related adjustments are completed and consistent throughout process
Perform Process Control -	Verify feedback loop on equipment adjustments
Perform Process Control -	Verify that process adjustments obtain desired result
Perform Process Control -	Respond to alarms, warnings, alerts and information
Perform Process Control -	Perform supplementary laboratory analysis as required
Perform Process Control -	Maintain corrosion control
Perform Process Control -	Control iron and manganese
Maintain a Fully Functional Facility -	Maintain intakes and outfalls
Maintain a Fully Functional Facility -	Ensure maintenance of security systems (infrastructure protection)
Manage Quality Assurance Program -	Follow sampling protocols
Maintain Operations Program -	Develop routine operating procedures for monitoring and analysis
Maintain Operations Program -	Develop routine operating schedule
Maintain Operations Program -	Develop Drinking Water Safety Plan (DWSP)
Maintain Operations Program -	Develop alarm response protocols
Maintain Operations Program -	Document the "control philosophy" for all systems and equipment

Major Area of Responsibility (Wastewater Collection)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Access Points to System (Sanitary & Storm) -	Locate access to system
Maintain Access Points to System (Sanitary & Storm) -	Expose access points
Maintain Access Points to System (Sanitary & Storm) -	Inspect access points for deficiencies (manholes and catch basins)
Maintain Access Points to System (Sanitary & Storm) -	Clean access point
Maintain Access Points to System (Sanitary & Storm) -	Repair access points
Maintain Access Points to System (Sanitary & Storm) -	Control access to outfall/inlet (e.g., rivers, creeks, lakes, retention/detention ponds)
Maintain Gravity Pipe (Sanitary & Storm) -	Monitor flow
Maintain Gravity Pipe (Sanitary & Storm) -	Inspect pipes for deficiencies
Maintain Gravity Pipe (Sanitary & Storm) -	Perform CCTV inspections
Maintain Gravity Pipe (Sanitary & Storm) -	Perform dye-testing inspections
Maintain Gravity Pipe (Sanitary & Storm) -	Perform smoke test
Maintain Gravity Pipe (Sanitary & Storm) -	Perform visual inspection
Maintain Gravity Pipe (Sanitary & Storm) -	Perform pipe or joint repair
Maintain Gravity Pipe (Sanitary & Storm) -	Maintain valves on pipes
Maintain Gravity Pipe (Sanitary & Storm) -	Perform trestle structure and security inspection
Maintain Gravity Pipe (Sanitary & Storm) -	Perform inverted siphon inspection
Maintain Lift Station -	Perform power flushing
Maintain Lift Station -	Perform bucket cleaning
Maintain Lift Station -	Clean pipes using other forms of mechanical devices including hand and power
Maintain Lift Station -	Treat pipe for root control using herbicides
Maintain Lift Station -	Perform major wet well cleaning
Maintain Lift Station -	Maintain an aesthetically pleasing lift station
Maintain Lift Station -	Repair force mains
Maintain Storm Water Storage and Treatment Facilities -	Maintain public safety signage
Maintain Storm Water Storage and Treatment Facilities -	Maintain inlets and outlets
Maintain Storm Water Storage and Treatment Facilities -	Monitor water quality
Maintain Storm Water Storage and Treatment Facilities -	Apply appropriate treatment prior to discharge to watershed as required
Maintain Storm Water Storage and Treatment Facilities -	Manage grounds around ponds to high water line
Maintain Storm Water Storage and Treatment Facilities -	Perform inspection of detention/retention ponds (wet/dry)
Maintain Storm Water Storage and Treatment Facilities -	Perform inspection of constructed wetlands
Maintain Storm Water Storage and Treatment Facilities -	Perform inspection of oil/grit separators

Major Area of Responsibility (Wastewater Collection)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Storm Water Storage and Treatment Facilities -	Perform inspection of overland drainage
Maintain Storm Water Storage and Treatment Facilities -	Perform inspection of siphons and force mains
Maintain Storm Water Storage and Treatment Facilities -	Maintain storm water facilities
Monitor Wastewater Quality -	Identify customers with potential impact on wastewater systems
Monitor Wastewater Quality -	Perform field sampling to identify wastewater characteristics at approved laboratory
Monitor Wastewater Quality -	Perform field tests on wastewater
Monitor Wastewater Quality -	Provide information on wastewater quality to relevant stakeholders
Monitor Wastewater Quality -	Interpret test results
Perform Emergency Response -	Practice emergency response plan
Perform Emergency Response -	Respond to alarms
Perform Emergency Response -	Fulfill first responder duties pertaining to spills in the collection system as required
Perform Emergency Response -	Communicate with first responders on containment issues (e.g., major fires, spills, etc.)
Perform Emergency Response -	Activate relevant components of Emergency Response Plan
Perform Emergency Response -	Notify regulatory authorities to report incidents immediately
Perform Emergency Response -	Respond to inoperable lift station events
Perform Emergency Response -	Respond to trunk line break (gravity)
Perform Emergency Response -	Respond to underground leaking fuel tanks
Perform Emergency Response -	Implement storm water flooding procedures based on event triggers
Perform Emergency Response -	Respond to odour control issues
Perform Emergency Response -	Develop Wastewater Collection Emergency Response Plan
Upgrade Collection System -	Provide information to stakeholders on Collection capacity
Upgrade Collection System -	Research new technologies and solutions
Upgrade Collection System -	Integrate new technology into existing systems
Upgrade Collection System -	Plan for shut downs
Upgrade Collection System -	Replace pipes
Upgrade Collection System -	Inspect new construction tying into municipal collection system (e.g., Construction Completion Certificate)
Upgrade Collection System -	Issue approval/denial of new construction tying into a municipal collection system (e.g., Final Acceptance Certificate)
Communicate with Stakeholders -	Communicate with media representatives within assigned parameters of role
Perform Administrative Duties -	Create work order and follow work flow

Major Area of Responsibility (Wastewater Treatment)	Task Analyzed/Codified in a 2013 Task Statement
Receive Raw Wastewater Through Collection Systems -	Measure continuous incoming flow rate
Receive Raw Wastewater Through Collection Systems -	Balance incoming flow to match facility capacity
Receive Raw Wastewater Through Collection Systems -	Trend incoming flow rate
Receive Raw Wastewater Through Collection Systems -	Identify physical characteristics of incoming influent
Receive Raw Wastewater Through Collection Systems -	Identify industrial customers for purpose of anticipating their discharge constituents
Receive Raw Wastewater Through Collection Systems -	Obtain information from wastewater collection that affects plant processes (e.g., 'what is coming down the line')
Receive Raw Wastewater Through Collection Systems -	React to abnormal events
Pretreat Raw Wastewater -	Confirm proper headworks equipment operation
Pretreat Raw Wastewater -	Operate headworks
Perform Primary Treatment -	Confirm proper primary treatment equipment operation
Perform Primary Treatment -	Perform floatable material from primary clarifier
Perform Primary Treatment -	Remove settleable solids from clarifier
Perform Primary Treatment -	Pump sludge to various solids handling facilities
Perform Primary Treatment -	Ensure clarifier loading rates are maintained within desired parameters
Perform Primary Treatment -	Analyze primary clarifier effluent quality
Perform Primary Treatment -	Assess impact of primary clarifier effluent on downstream process
Perform Primary Treatment -	Manage deliveries of fat, oil, & grease (FOG) where applicable
Perform Secondary Treatment -	Determine concentration of mixed liquor volatile suspended solids (MLVSS) within activated sludge process
Perform Secondary Treatment -	Monitor dissolved oxygen concentration as appropriate to process
Perform Secondary Treatment -	Maintain ratio of food to microorganism (F/M ratio) by controlling mixed liquor concentration
Perform Secondary Treatment -	Maintain sludge age by wasting activated sludge
Perform Secondary Treatment -	Maintain secondary clarifier sludge blanket
Perform Secondary Treatment -	Remove secondary scum blanket
Perform Secondary Treatment -	Manage return activated sludge (RAS) rate
Perform Secondary Treatment -	Manage biomass growth on fixed media
Perform Secondary Treatment -	Manage membrane treatment process as per facility design and operating parameters
Perform Tertiary Treatment -	Test for ammonia, phosphorous and nitrate levels
Perform Tertiary Treatment -	Treat ammonia, phosphorous and nitrate as appropriate to process
Perform Tertiary Treatment -	Measure dissolved oxygen levels to anaerobic and anoxic zones as appropriate to process

Major Area of Responsibility (Wastewater Treatment	Task Analyzed/Codified in a 2013 Task Statement
Perform Tertiary Treatment -	Operate equipment to control oxygen levels
Perform Tertiary Treatment -	Manage volatile fatty acids by fermentation for biological reduction of phosphorus
Perform Tertiary Treatment -	Operate tertiary filtration equipment to polish effluent quality
Perform Tertiary Treatment -	Maintain disinfection systems for removal of pathogenic organisms
Discharge Effluent -	Perform inspection of wetland facility
Discharge Effluent -	Monitor key discharge effluent parameters
Discharge Effluent -	Measure volume of discharged effluent
Discharge Effluent -	Sample effluent toxicity for impact on marine life (e.g., bioassay)
Discharge Effluent -	Recycle effluent for process use
Perform Solids Treatment -	Thicken solids
Perform Solids Treatment -	Ferment solids
Perform Solids Treatment -	Digest solids
Perform Solids Treatment -	Dewater solids
Perform Solids Treatment -	Dispose of inert solids
Manage odour -	Capture foul air odours
Manage odour -	Operate odour control equipment
Manage odour -	Perform odour assessments
Manage odour -	Respond to odour complaints
Manage odour -	Perform process analyses as per Standard Operating Procedures
Manage odour -	Dispose of samples and waste
Manage odour -	Perform reportable parameter analyses as required by Approval/Code of Practice
Perform Process Control -	Interpret data from Supervisory Control and Data Acquisition System (SCADA) for process optimization
Perform Process Control -	Perform ‘walkthroughs’ to observe overall facility performance
Perform Process Control -	Make adjustments to processes in response to laboratory results
Perform Process Control -	Recognize abnormal wastewater conditions
Perform Process Control -	Conduct hydraulic analysis flow rates
Perform Process Control -	Anticipate hydraulic surges
Perform Process Control -	Troubleshoot process abnormalities
Perform Process Control -	Maintain operational logs

Major Area of Responsibility (Wastewater Treatment)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Fully Functioning Facility -	Receive chemicals
Maintain Fully Functioning Facility -	Store chemicals
Maintain Fully Functioning Facility -	Perform housekeeping
Maintain Fully Functioning Facility -	Perform grounds keeping

Major Area of Responsibility (Common Task) (Compliance, Administration, Operational Support)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Regulatory Requirements -	Ensure operation within facility approval/code of practice
Maintain Regulatory Requirements -	Comply with safety requirements
Maintain Regulatory Requirements -	Maintain Emergency Response Plan
Maintain Regulatory Requirements -	Maintain Operations Program
Ensure Quality Assurance Program -	Maintain calibration
Ensure Quality Assurance Program -	Perform sampling activities
Ensure Quality Assurance Program -	Maintain laboratory documents
Ensure Quality Assurance Program -	Participate in quality assurance audits
Perform Administrative Duties -	Participate in one's own performance management
Perform Administrative Duties -	Participate in developing bylaws
Perform Administrative Duties -	Plan work
Perform Administrative Duties -	Perform inventories
Participate in Workforce Development -	Contribute to business continuity
Participate in Workforce Development -	Participate in training
Participate in Workforce Development -	Participate in becoming an effective operator
Perform Operational Communications & Liaison -	Respond to inter-employee issues
Perform Operational Communications & Liaison -	Support co-workers with workplace challenges
Perform Operational Communications & Liaison -	Contribute to customer and media relations
Perform Operational Communications & Liaison -	Perform worksite communication
Perform Operational Communications & Liaison -	Communicate with owners/officials
Perform Operational Communications & Liaison -	Communicate with authorities (e.g., government agencies)

Major Area of Responsibility (Common Task) (Compliance, Administration, Operational Support)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Operational Support Requirements -	Develop Standard Operating Procedures/Safe Work Operating Procedures
Maintain Operational Support Requirements -	Manage maintenance program
Maintain Operational Support Requirements -	Participate in inspections/audits
Maintain Operational Support Requirements -	Develop budgets
Maintain Operational Support Requirements -	Manage operations program

Major Area of Responsibility (Common Task) (Disinfection)	Task Analyzed/Codified in a 2013 Task Statement
Serve as a Safeguard of Public Health -	Impart the importance of disinfecting and testing the water
Serve as a Safeguard of Public Health -	Measure effectiveness of disinfection process
Perform Disinfection with Chlorine -	Re-test if results are outside acceptable parameters
Perform Disinfection with Chlorine -	Maintain chlorine equipment
Perform Disinfection with Chlorine -	Handle chlorine materials safely
Perform Disinfection with Chlorine -	Maintain use of chlorine gas (100%) in a facility in a safe manner
Perform Disinfection with Chlorine -	Maintain use of calcium hypochlorite (65%) in a facility in a safe manner
Perform Disinfection with Chlorine -	Maintain use of sodium hypochlorite (12%) in a facility in a safe manner
Perform Disinfection with Chlorine -	Maintain use of onsite hypochlorite (0.8%) in a facility in a safe manner
Perform Disinfection with Chlorine -	Perform dosage calculations
Perform Disinfection with Chlorine -	Maintain records of chlorine use
Perform Disinfection with Chlorine -	Disinfect new construction or repair in a distribution system
Perform Disinfection with Chlorine -	Disinfect water wells
Perform Disinfection with Chlorine -	Disinfect wastewater at process end or as an operational application
Perform Disinfection with Chlorine -	Disinfect water reservoirs
Perform Disinfection with Chlorine -	Troubleshoot chlorination facility
Perform Disinfection with Chlorine -	Optimize chlorine residual specific to the source water of your facility
Perform Disinfection with Chlorine -	Minimize the formation of chlorine disinfection by-products
Perform Disinfection with Chlorine -	Perform dechlorination
Perform Disinfection with Chlorine -	Perform calculation or follow consultant's calculation of contact time for a specific source and facility

Major Area of Responsibility (Common Task) (Disinfection)	Task Analyzed/Codified in a 2013 Task Statement
Perform Disinfection with Ultra-Violet (UV) -	Maintain ultra-violet disinfection equipment
Perform Disinfection with Ultra-Violet (UV) -	Maintain ultra-violet equipment records
Perform Disinfection with Ultra-Violet (UV) -	Disinfect water/wastewater using ultra-violet
Perform Disinfection with Ultra-Violet (UV) -	Troubleshoot ultra-violet facility
Identify Potential Microbiological Contamination in Water-	Perform representative bacteriological
Identify Potential Microbiological Contamination in Water-	Perform disinfectant residual analysis
Identify Potential Microbiological Contamination in Water-	Identify disinfection equipment effectiveness (moves to new MAR -G)
Identify Potential Microbiological Contamination in Water-	Maintain integrity of sample for shipping to external laboratory

Major Area of Responsibility (Common Task) (Support Systems)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Electrical Circuits and Devices -	Demonstrate basic knowledge of principles of electricity
Maintain Electrical Circuits and Devices -	Demonstrate a working knowledge of circuits (e.g., switches, relays -including major/common types)
Maintain Electrical Circuits and Devices -	Demonstrate a working knowledge of known safety risks and hazards
Maintain Electrical Circuits and Devices -	Demonstrate a working knowledge of electrical maintenance protocols
Maintain Electrical Circuits and Devices -	Prepare to perform work on electrical devices
Maintain Electrical Circuits and Devices -	Keep a current contact/resource list of electrical service equipment suppliers
Maintain Electrical Circuits and Devices -	Perform minor periodic maintenance (e.g., lighting, pumps, valves, office equipment, HVAC, fleet vehicles)
Maintain Electrical Circuits and Devices -	Perform electrical start up for a facility/system
Maintain Electrical Circuits and Devices -	Perform electrical shut down of a system component
Maintain Electrical Circuits and Devices -	Keep an up-to-date record of electrical 'as built' modifications to the Operations Program document
Maintain Electrical Circuits and Devices -	Perform troubleshooting on electrical issues
Maintain Electrical Motors -	Demonstrate a basic knowledge of common components and operating parameters of electrical motors
Maintain Electrical Motors -	Demonstrate a working knowledge of common motor types and where they can be used
Maintain Electrical Motors -	Demonstrate a working knowledge of safety practices in proximity/use of electrical motors
Maintain Electrical Motors -	Perform motor lifecycle management

Major Area of Responsibility (Common Task) (Support Systems)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Electrical Motors -	Demonstrate a working knowledge of name plate information items and implications for our process/system
Maintain Electrical Motors -	Remove and replace an electrical motor
Maintain Electrical Motors -	Perform required maintenance for the ongoing operation of a motor
Maintain Electrical Motors -	Monitor the ongoing operation of electrical motors
Maintain Mechanical Drives -	Demonstrate a working knowledge of common types of drives and couplers including components and operations
Maintain Mechanical Drives -	Demonstrate a working knowledge of safety practices in proximity/use of common drives
Maintain Mechanical Drives -	Monitor the status of drives
Maintain Mechanical Drives -	Perform required maintenance on drives
Maintain Mechanical Drives -	Remove and replace mechanical drives
Maintain Pumps -	Demonstrate a working knowledge of the basic pump types and applications
Maintain Pumps -	Demonstrate a working knowledge of pump components for purposes of proper operation and maintenance
Maintain Pumps -	Demonstrate a working knowledge of hydraulics and pump curves as applicable to the pump selection
Maintain Pumps -	Demonstrate a working knowledge of operating limitations on various types of pumps
Maintain Pumps -	Perform pump repair and maintenance
Maintain Pumps -	Monitor the ongoing operation of pumps
Maintain Pumps -	Demonstrate a working knowledge of known safety and risk hazards for pump applications in your facility or system
Maintain Pumps -	Demonstrate a working knowledge of grinders, communitors and grinder pumps and their applications in wastewater
Maintain Valves -	Demonstrate a working knowledge of the basic types and applications of valves in the industry
Maintain Valves -	Demonstrate a working knowledge of valve components for purposes of maintenances and proper operation
Maintain Valves -	Maintain/exercise valves on a regularly schedule basis
Maintain Valves -	Replace valves as required
Maintain Compressors and Blowers -	Perform routine maintenance on a regularly scheduled basis
Maintain Compressors and Blowers -	Perform repairs on an 'as needed' basis

Major Area of Responsibility (Common Task) (Support Systems)	Task Analyzed/Codified in a 2013 Task Statement
Maintain Engines (Diesel, Natural Gas, Gasoline, Propane) -	Perform routine maintenance on a regularly scheduled basis
Maintain Engines (Diesel, Natural Gas, Gasoline, Propane) -	Perform scheduled testing of stand-by engines and associated equipment
Maintain Engines (Diesel, Natural Gas, Gasoline, Propane) -	Perform repairs on an 'as needed' basis
Maintain Controls and Instrumentation -	Perform calibration of instrumentation and controls for accuracy
Maintain Controls and Instrumentation -	Perform routine maintenance on a regularly scheduled basis and repairs on an 'as needed' basis
Maintain Controls and Instrumentation -	Keep an up-to-date contact list of service and equipment suppliers
Maintain Controls and Instrumentation -	Monitor the alignment between SCADA control center and individual read outs
Maintain Controls and Instrumentation -	Adjust auto control loop to optimize facility and system operation
Maintain a Fully Functional Facility -	Demonstrate a comprehensive working knowledge of the major facility components and their interactions
Maintain a Fully Functional Facility -	Perform basic scheduled and unscheduled 'change out' activities to your facilities or system
Maintain a Fully Functional Facility -	Maintain mobile equipment (e.g., forklifts, cranes, vehicles, lifts, etc.)
Maintain a Fully Functional Facility -	Maintain physical structure (e.g., buildings, grounds, roads, etc.)
Maintain a Fully Functional Facility -	Maintain security system
Maintain a Fully Functional Facility -	Maintain human and wildlife access reduction
Maintain a Fully Functional Facility -	Maintain fire prevention and suppression devices
Maintain a Fully Functional Facility -	Maintain inventory of commonly replaced components
Maintain a Fully Functional Facility -	Ensure maintenance of building's mechanical system
Maintain On Site Analytics -	Keep a clean and safe laboratory work station
Maintain Corrosion Control -	Interpret water quality characteristics for corrosion potential
Maintain Corrosion Control -	Choose a corrosion control method for your facility or system
Maintain Corrosion Control -	Perform routine maintenance on corrosion control equipment
Maintain Corrosion Control -	Perform major corrosion repair

Major Area of Responsibility (Common Task) (Health and Safety)	Task Analyzed/Codified in a 2013 Task Statement
Complete Ongoing Health and Safety Compliance -	Complete safety-related documentation
Complete Ongoing Health and Safety Compliance -	Practice safe work processes informed by best practices and legislation
Complete Ongoing Health and Safety Compliance -	Conduct work in a safe and healthy manner to meet or exceed OHS requirements
Complete Ongoing Health and Safety Compliance -	Implement (meet or exceed) safety standards (e.g., OHS, ISO, CSA, ANSI, SAE, manufacturer's specifications, etc.)

Major Area of Responsibility (Common Task) (Health and Safety)	Task Analyzed/Codified in a 2013 Task Statement
Complete Ongoing Health and Safety Compliance -	Maintain currency/training to assure status as a Competent Worker
Complete Ongoing Health and Safety Compliance -	Ensure work permits are obtained
Complete Ongoing Health and Safety Compliance -	Participate in safety audits
Contribute to a Safety Culture -	Foster a positive safety culture
Contribute to a Safety Culture -	Address unsafe work practices
Contribute to a Safety Culture -	Practice personal hygiene for disease control
Perform Field/Site/Task Specific Hazard Assessment -	Perform hazard assessment
Perform Field/Site/Task Specific Hazard Assessment -	Perform ongoing hazard assessments based on daily working conditions and jobs
Perform Field/Site/Task Specific Hazard Assessment -	Maintain hazard assessment program
Perform Work Safely -	Conduct atmospheric testing of confined spaces/restricted spaces (H2S, O2, CO, LEL, CL2, etc.)
Perform Worksite Safety Inspection -	Conduct informal worksite inspections
Perform Worksite Safety Inspection -	Conduct formal worksite inspections
Perform Safe Work Planning -	Develop the safe work plan
Perform Safe Work Planning -	Revise the safe work plan
Perform Safe Work Planning -	Maintain a 'work alone' plan
Perform Safe Work Planning -	Develop safe work procedures
Perform Safe Work Planning -	Maintain safe work operating procedures
Use Personal Protective Equipment -	Obtain personal protective equipment
Use Personal Protective Equipment -	Maintain personal protective equipment
Use Personal Protective Equipment -	Promote use of personal protective equipment
Use Personal Protective Equipment -	Obtain required immunizations
Participate in Safety Management -	Participate in near miss/incident investigations, as required
Participate in Safety Management -	Report near misses/incidents
Participate in Safety Management -	Participate in safety committee meetings
Engage in Health and Safety External Relations -	Establish external contractors safety relationship
Engage in Health and Safety External Relations -	Monitor ongoing safety of site visitors
Engage in Health and Safety External Relations -	Provide contractor safety orientations
Engage in Health and Safety External Relations -	Follow prime contractor safety procedures

2012 DACUM Workshop Participants – Initial Identification of Major Areas of Responsibility and Major Tasks

Water Supply & Treatment

Gordon Cheney	Henry Kroeger Regional Water Services	Class III Treatment Plant Operator
Kerry Clark	EPCOR Water Services, Edmonton	Manager, Shift Operations, E.L. Smith
Glenda Donovan-Malik	Syncrude Canada Ltd., Fort McMurray	Water Quality Specialist (retired 2011); AWWOA, Honorary Life Member
Lyle Farris	Municipal District of Lesser Slave River #124	Utilities Foreman
Jim Hepler	Town of Devon	Water & Wastewater Plant Operator III
Del Morrison	Technical Consultant in Private Practice	Executive Director (retired), AWWOA
Ross Pentney	Town of Barrhead	Lead Operator
Pat Philip	City of Calgary, Water Resources	Operations Supervisor
Davey Robertson	EPCOR Water Service, Okotoks	Lead Hand
Curtis Schultz	Aquatera Utilities Inc. Grande Prairie	Senior Operations Technician
Robert (Bob) Vatcher	Alberta Environment & Water, Lethbridge	Drinking Water Operations Specialist

Water Distribution Systems

Gary Baptist	City of Calgary	Operator/Technical Advisor Distribution
Bernie Berube	Town of Drayton Valley	Utilities and Safety Manager
Phil Carefoot	EPCOR Water Services, Okotoks	Operator
Christine Cartier	Strathcona County	Supervisor, Transmission
Blair Dancer	City of Calgary	Supervisor
Blaine Huber	Aquatera, Grande Prairie	Operator
Allan Kendrick	Town of Drumheller	Infrastructure Services Director
Norm Kerychuk	EPCOR Water Services, Edmonton	Network Operator
Tyrone Patten	Town of Didsbury	Utility Operator, Water
Morvyn Patterson	Village of Bittern Lake	Water System Operator

APPENDIX G – Inventory of Task Statements developed under Sub-project 5 of the C2H Initiative

Wastewater Collection

Christine Cartier	Strathcona County	Supervisor, Transmission
Randy Girling	City of Calgary	Senior Leader, Asset Maintenance
Michael Johnson	Town of Didsbury	Utility Operator
Del Morrison	Technical Consultant in Private Practice	Executive Director (retired), AWWOA

Wastewater Treatment

Cliff Ayrey	City of Calgary	Chief Operator
Paresh Dhariya	Town of Peace River	Director of Engineering
Trevor Gaalaas	City of Red Deer	Training Lead
Mike Johnson	City of Calgary	Plant Operator III
Sandra Kotch	City of Calgary	Operator III / Field Trainer
Davey Robertson	EPCOR Water Service, Okotoks	Lead Hand
Curtis Schultz	Aquatera Utilities Inc. Grande Prairie	Senior Operations Technician
Jarvis Singer	City of Calgary	Plant Operator II
Rod Teske	City of Red Deer	Lead Operator

2013 Job Task Analysis – Panel Participants

Cliff Ayrey	Certified Operator	City of Calgary/Village of Longview
Wade Bell	Certified Operator	Rockyview County
Bernie Berube	Certified Operator	Town of Drayton Valley
Tom Blake	Safety & Training Coordinator	Aquatera Utilities Inc.
Angela Brown	Environmental Protection Officer	Alberta Environment & Sustainable Resource Development
D.J. Brough	Certified Operator	City of Red Deer
Garth Carl	Certified Operator	Henry Kroeger Regional Water Services Commission
Charles Conroy	Certified Operator	Strathcona County
Mike Daley	Certified Operator	Town of Olds
Dawn Dierker	Operating Specialist	ATAP Infrastructure Management Ltd
Doug Erickson	Environmental Protection Officer	Alberta Environment & Sustainable Resource Development
Kim Fath	Certified Operator	Town of Vulcan
Trevor Gaalaas	Certified Operator	City of Red Deer
Ralph Havinga, C.E.T.	General Manager	Newell Regional Services Corporation
Jim Hepler	Certified Operator	Town of Devon
Aaron Janzen, P.Eng.	Drinking Water Operating Specialist	Alberta Environment & Sustainable Resource Development
Mike Johnston	Certified Operator	City of Calgary
Sandra Kotch	Certified Operator	City of Calgary
Lynn Lebirk	Certified Operator	City of Edmonton
John MacDonald	Certified Operator	City of Red Deer
Nancy McAteer	Certified Operator	Town of Penhold
Sterling Mitchell	Certified Operator	Rocky View Utility Corporation
Valerie Moore	Compliance Support	City of Calgary
Ryan Moray	Certified Operator	Town of Banff
Delbert Morrison, C.E.T.	Technical Consultant	Alberta Water & Wastewater Operators Association
Bert E. Miller	Certified Operator	City of Red Deer
Bert J. Miller	Certified Operator	City of Red Deer
George Neurohr, P.Eng.	Municipal Approvals Engineer/DWOS	Alberta Environment & Sustainable Resource Development
Steve Pelkey	Certified Operator	Canadian Forces, Betty Lake Water Treatment Plant (Wainwright)
Michelle Poirier	Certified Operator	ATAP Infrastructure Management Ltd
Howard Preston	Environment & Safety Consultant	EPCOR Water Services
Alan Saunders	Certified Operator	Town of Bon Accord/HSE consultant in private practice
Brent Schapansky	Certified Operator	Northern Sunrise County/NEW Water Ltd.
Jarvis Singer	Certified Operator	City of Calgary
Dominic Spatafora	Manager, Drainage Branch	City of Edmonton
Rod Teske	Certified Operator	City of Red Deer
Shawn Tooth	Certified Operator	City of Leduc

APPENDIX G – Inventory of Task Statements developed under Sub-project 5 of the C2H Initiative

APPENDIX H
Inventory of Instructional Modules developed under Sub-project Five

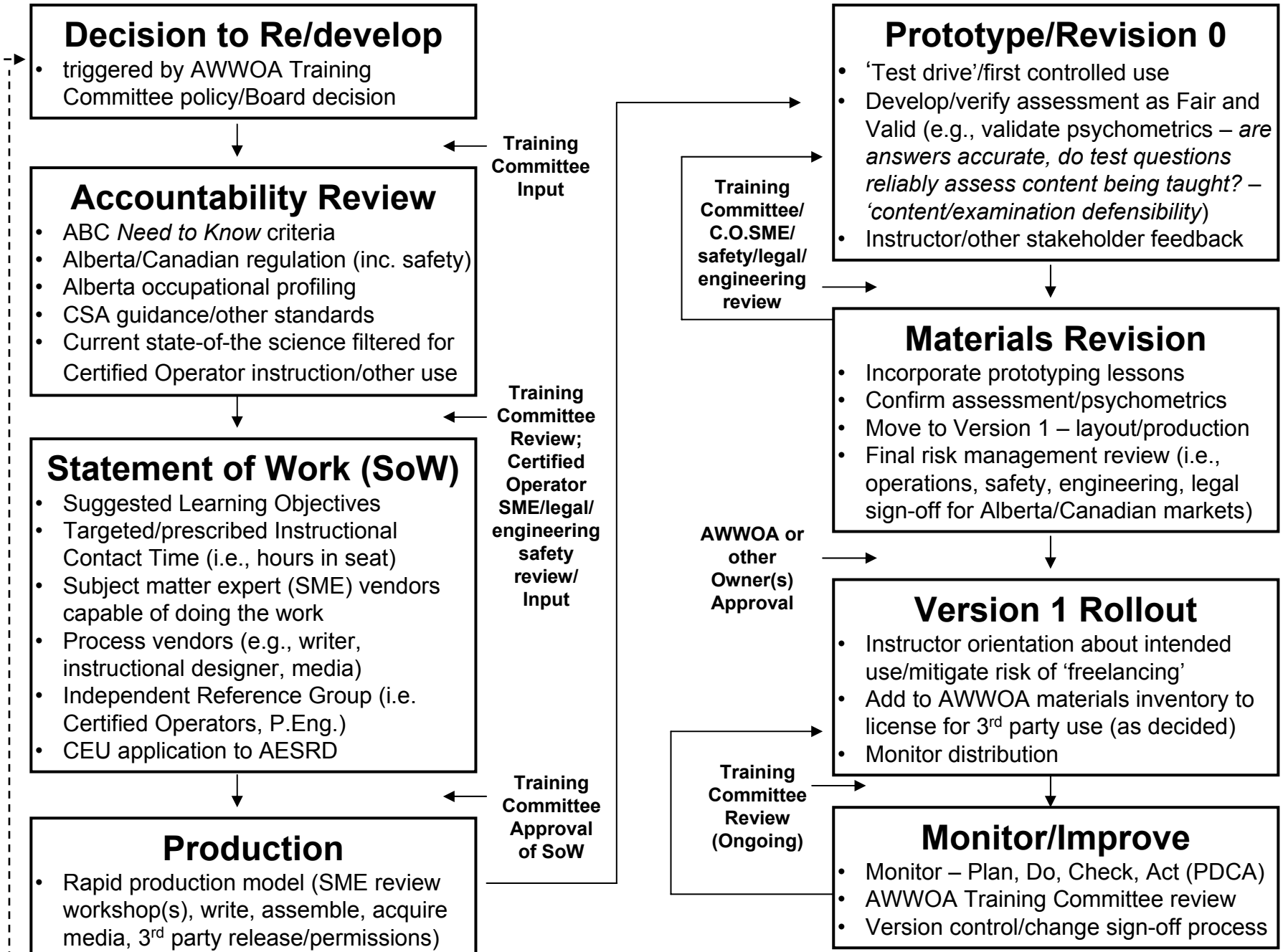
APPENDIX H
INVENTORY OF INSTRUCTIONAL MODULES DEVELOPED FOR AWWOA UNDER C2H INITIATIVE SUBPROJECT FIVE*

Number	Module ID	Descriptive Title of Module [Discipline]
1	WT01	Sources of Raw Water [Water Treatment]
2	WT02	Ground Water [Water Treatment]
3	WT03	Chemical Conditioning [Water Treatment]
4	WT04	Chlorine Gas Disinfection [Water Treatment]
5	WT05	Chlorine Dioxide - working file status [Water Treatment]
6	WT06	Hypochlorite Disinfection [Water Treatment]
7	WT07	Ozone Disinfection [Water Treatment]
8	WT08	Ultraviolet Disinfection [Water Treatment]
9	WT09	Iron and Manganese Treatment [Water Treatment]
10	WT10	pH Adjustment [Water Treatment]
11	WT11	Fluoridation [Water Treatment]
12	WT12	Mixing units, Coagulation, & Flocculation [Water Treatment]
13	WT13	Liquid Solids Separation [Water Treatment]
14	WT14	Filtration [Water Treatment]
15	WT15	Residual Disposal [Water Treatment]
16	WT16	Additional Treatment Process [Water Treatment]
17	WT17	Asbestos, Chemical, Metals, Hexavalent Chromium & Radiological [Water Treatment]
18	WT18	Coliform Bacteria, Biological & Organic [Water Treatment]
19	WT19	Jar-testing (Overview) [Water Treatment]
20	WT20	Evaluate Operation of Equipment [Water Treatment]
21	WT21	Operate Equipment (A) [Water Treatment]
22	WT22	Operate Equipment (B) [Water Treatment]
23	WT23	Operate Equipment (C) [Water Treatment]
24	WT24	Perform Maintenance (A) [Water Treatment]
25	WT25	Perform Maintenance (B) [Water Treatment]
26	WT26	Perform Maintenance (C) [Water Treatment]
27	WT27	Perform Maintenance (D) [Water Treatment]
28	WT28	Write Complete Reports (Municipal, Provincial, Federal) [Water Treatment]
29	WT29	Respond to Emergencies/Response Plan [Water Treatment]
30	WT30	Safety Procedures
31	WWT01	Sources of Water [Wastewater Treatment]
32	WWT02	Characteristics of Wastewater (Incoming Stream) [Wastewater Treatment]
33	WWT03	Apply Safety Procedures for Waterborne Pathogens, and Biological Factors [Wastewater Treatment]
34	WWT04	Chemical Hazards [Wastewater Treatment]
35	WWT05	Personal Protective Equipment (PPE) [Wastewater Treatment]

Number	Module ID	Descriptive Title of Module [Discipline]
36	WWT06	General Health and Safety [Wastewater Treatment]
37	WWT07	Establish and Follow Emergency Preparedness Plan [Wastewater Treatment]
38	WWT08	Record Information [Wastewater Treatment]
39	WWT09	Evaluate Equipment [Wastewater Treatment]
40	WWT10	Performance Preventative and Corrective Maintenance (A) [Wastewater Treatment]
41	WWT11	Performance Preventative and Corrective Maintenance (B) [Wastewater Treatment]
42	WWT12	Performance Preventative and Corrective Maintenance C [Wastewater Treatment]
43	WWT13	Performance Preventative and Corrective Maintenance (D) [Wastewater Treatment]
44	WWT14	Operate Equipment (A) [Wastewater Treatment]
45	WWT15	Operate Equipment (B) [Wastewater Treatment]
46	WWT16	Operate Equipment* (delete & consolidated) [Wastewater Treatment]
47	WWT17	Operate Equipment C [Wastewater Treatment]
48	WWT18	Preliminary Treatment [Wastewater Treatment]
49	WWT19	Primary Treatment [Wastewater Treatment]
50	WWT20	Secondary Treatment (A) [Wastewater Treatment]
51	WWT21	Secondary Treatment (B) [Wastewater Treatment]
52	WWT22	Tertiary Treatment [Wastewater Treatment]
53	WWT23	Disinfection [Wastewater Treatment]
54	WWT24	Effluent Discharge [Wastewater Treatment]
55	WWT25	Chemical Additions [Wastewater Treatment]
56	WWT26	Solids Handling [Wastewater Treatment]
57	WWT27	Laboratory Analysis (sampling, analysis, interpretation and records) [Wastewater Treatment]
58	WWT28	Lagoon Maintenance and Security [Wastewater Treatment]
59	WWC00	Introduction to Wastewater Collection
60	WWC01	Inspect System [Wastewater Collection]
61	WWC02	Clean System [Wastewater Collection]
62	WWC03	Rehabilitate and Repair Collection System [Wastewater Collection]
63	WWC04	Maintain and Restore Collection System [Wastewater Collection]
64	WWC05	Electrical [Wastewater Collection]
65	WWC06	Electronic [Wastewater Collection]
66	WWC07	Mechanical [Wastewater Collection]
67	WWC08	Monitor, Evaluate and Adjust Collection System [Wastewater Collection]
68	WWC09	Administer System [Wastewater Collection]
69	WWC10	Safety Procedures [Wastewater Collection]
70	WWC11	Safety Procedures (Ground Disturbance) [Wastewater Collection]
71	WWC12	Emergency Plans [Wastewater Collection]
72	WD01	System Information Components [Water Distribution]
73	WD02	Monitor Disinfection, Evaluate Disinfection, and Adjust [Water Distribution]
74	WD03	Monitor Water Quality [Water Distribution]
75	WD04	Collect and preserve samples [Water Distribution]

Number	Module ID	Descriptive Title of Module [Discipline]
76	WD05	Perform Water Analysis [Water Distribution]
77	WD06	Interpret Laboratory Analysis [Water Distribution]
78	WD07	Install Equipment [Water Distribution]
79	WD08	Operate Equipment A [Water Distribution]
80	WD09	Operate Equipment B [Water Distribution]
81	WD10	Operate Equipment C [Water Distribution]
82	WD11	Perform Maintenance A [Water Distribution]
83	WD12	Perform Maintenance B [Water Distribution]
84	WD13	Perform Maintenance C [Water Distribution]
85	WD14	Manage System [Water Distribution]
86	WD15	Promote Public Relations [Water Distribution]
87	WD16	Safety Program [Water Distribution]
88	WD17	Record Keeping [Water Distribution]
89	HS01	Contribute to a Safety Culture [Health & Safety for W/WW Utilities]
90	HS02	Health and Safety Compliance [Health & Safety for W/WW Utilities]
91	HS03	Safety Procedures - Ground Disturbance & Traffic Control [Health & Safety for W/WW Utilities]
92	HS04	Facility Safety [Health & Safety for W/WW Utilities]
93	COM01	Introduction [Compliance for W/WW Utilities]
94	COM02	Administer System [Compliance for W/WW Utilities]
95	COM03	Maintain Regulatory Requirements [Compliance for W/WW Utilities]

* A one-time provision has been made for specific sustaining activities for the course and materials re/development process, with a rural pilot project to be implemented in 2014, as informed by a business case which the AWWOA Executive Board adopted in principle at its January 2014 Board meeting.



AWWOA Course Re/development process
(Version 2, updated 25 October 2012)

APPENDIX I
Enduring Video Suite (on-demand access at YouTube/Archive.org)

APPENDIX I - Closer to Home (C2H) Initiative – Enduring Video Suite

Productions and Enduring YouTube and/or Archive.org Locations

Public Service Announcements (PSAs) & 'Good Idea' Mini-cases for Municipalities
A Tale of 3 Villages (2 min Public Service Announcement – Community collaboration via consortia) http://www.youtube.com/watch?v=9VfFLdIea-M Archive.org http://tinyurl.com/ktwypuj
A Tale of 3 Villages (5 min mini-case study – model approach for other rural municipalities) http://www.youtube.com/watch?v=EDo68EsnlEg Archive.org http://tinyurl.com/ktwypuj
And the Work Goes On (2 min Public Service Announcement – Importance of operational succession) http://www.youtube.com/watch?v=QcDl5cdX56E Archive.org http://tinyurl.com/lbf4yv9
And the Work Goes On (5 min mini-case study – model approach for other rural municipalities) http://www.youtube.com/watch?v=e09N_tphnbQ Archive.org http://tinyurl.com/lbf4yv9
Conservation Pays Dividends (2 min Public Service Announcement – Municipal conservation practices) http://www.youtube.com/watch?v=NiiWGuw2kCQ Archive.org http://tinyurl.com/lv2q2aw
Conservation Pays Dividends (5 min mini-case study – model approach for other rural municipalities) http://www.youtube.com/watch?v=euOhKv1WaHk Archive.org http://tinyurl.com/lv2q2aw
The True Cost of Water (2 min Public Service Announcement – Water loss management/accounting) http://www.youtube.com/watch?v=YugnCttDmaA Archive.org http://tinyurl.com/krkdjyo
The True Cost of Water (5 min mini-case study – model approach for other rural municipalities) http://www.youtube.com/watch?v=0aAKJJQRC04 Archive.org http://tinyurl.com/krkdjyo
It's All Connected (2 min Public Service Announcement – Looking after our Alberta lake watersheds) http://www.youtube.com/watch?v=uqN5SAP3MnA Archive.org http://tinyurl.com/lw74sxx
It's All Connected (5 min mini-case study – model approach for other rural municipalities) http://www.youtube.com/watch?v=GsXfeAIVKuE Archive.org http://tinyurl.com/lw74sxx
Briefings to Support Safe Drinking Water & Responsibly Managed Wastewater in Small Centres
Taking Care of Your Drinking Water and Wastewater (29 min briefing for Owners/Officials/Operators) http://www.youtube.com/watch?v=0oHKtrD7ZLM
Examining the Vulnerability of Public Officials (29 minute briefing for Owners/Officials/Operators) http://www.youtube.com/watch?v=2-HjkatYTAw
Demystifying Operator Certification in Alberta (23 minute briefing for Owners/Officials/Educators) http://www.youtube.com/watch?v=27UH96-OIzQ
Success Factors for Sustainable Drinking Water Systems (19 min briefing - Owners/Officials/Operators) https://archive.org/details/SuccessFactorsForSustainableSmallDrinkingWaterSystems
Unintended Consequences of Regulation on Rural Operators – Study Overview (8:30 min briefing) http://www.youtube.com/watch?v=KQ3NO_MxaV4

APPENDIX J
Verified Municipalities Accessing the AWWOA Training Subsidy

APPENDIX J - Verified Municipalities Impacted by the Training Subsidy

C2H Initiative – Training Subsidy Municipality Participation to December 31/13

	Municipality	Participants		Municipality	Participants
1	**Acme**, Village of	3	*40*	**Gibbons**, Town of	5
2	**Alix**, Village of	3	*41*	**Gift Lake**, Métis Settlement of	1
3	**Athabasca**, Town of	6	*42*	**Glendon**, Village of	1
4	**Banff**, Town of	3	*43*	**Glenevis**, Hamlet of (Lac Ste Anne Co.)	1
5	**Barrhead**, Town of	1	*44*	**Glenwood**, Village of	2
6	**Bashaw**, Town of	1	*45*	**Goodfish Lake**, FN Community of	2
7	**Beaverlodge**, Town of	2	*46*	**Grande Cache**, Town of	1
8	**Bentley**, Town of	2	*47*	**Hanna**, Town of	4
9	**Black Diamond**, Town of	3	*48*	**High Prairie**, Town of	4
10	**Bon Accord**, Town of	2	*49*	**High River**, Town of	2
11	**Bonnyville**, Town of	1	*50*	**Hines Creek**, Village of	1
12	**Brocket**, FN Settlement of	5	*51*	**Hinton**, Town of	1
13	**Bruderheim**, Town of	4	*52*	**Irma**, Village of	1
14	**Cardston**, Town of	3	*53*	**Keg River**, Community of	1
15	**Carmangay**, Village of	2	*54*	**Kikino**, Métis Settlement of	4
16	**Castor**, Town of	4	*55*	**Killam**, Town of	3
17	**Claresholm**, Town of	1	*56*	**Lac La Biche**, Hamlet of (County of LLB)	1
18	**Clive** , Village of	2	*57*	**Legal**, Town of	2
19	**Coalhurst**, Town of	1	*58*	**Langdon**, Hamlet of (Rocky View Co.)	1
20	**Cold Lake**, City of	6	*59*	**Magrath**, Town of	2
21	**Coutts**, Village of	2	*60*	**Manning**, Town of	3
22	**Cowley**, Village of	6	*61*	**Milk River**, Town of	2
23	**Crossfield**, Town of	2	*62*	**Nanton**, Town of	4
24	**Daysland**, Town of	2	*63*	**New Norway**, Hamlet of (Camrose Co.)	1
25	**Dewinton**, Hamlet (MD Foothills)	1	*64*	**Nobleford**, Village of	4
26	**Didsbury**, Town of	3	*65*	**Opportunity #17**, Municipal District of	16
27	**Donnelly**, Village of	2	*66*	**Peace River**, Town of	1
28	**Driftpile**, FN Settlement of	1	*67*	**Penhold**, Town of	3
29	**Elk Point**, Town of	1	*68*	**Pincher Creek**, Town of	13
30	**Enilda**, Hamlet of (MD Big Lakes)	3	*69*	**Ponoka**, Town of	2
31	**Fairview**, Town of	2	*70*	**Red Earth Creek**, Hamlet of (MD #17)	2
32	**Falher**, Town of	6	*71*	**Rimbey**, Town of	1
33	**Foremost**, Village of	4	*72*	**Slave Lake**, Town of	11
34	**Forestburg**, Village of	1	*73*	**Smoky Lake**, Town of	1
35	**Fort Macleod**, Town of	3	*74*	**Spedden**, Hamlet of (Smoky Lake Co.)	4
36	**Fort Vermillion**, Hamlet of	12	*75*	**Spirit River**, Town of	2
37	**Fox Creek**, Town of	2	*76*	**Sputinow**, Community of (MD #87)	1
38	**Frog Lake**, Cree Community of	9	*77*	**Stirling**, Village of	1
39	**Galahad**, Village of	2	*78*	**Sundre**, Town of	1

C2H Initiative – Training Subsidy Municipality Participation to December 31/13 (continued)

	Municipality	Participants
79	**Swan Hills**, Town of	4
80	**Thorsby**, Village of	3
81	**Trochu**, Town of	1
82	**Two Hills**, Town of	2
83	**Valleyview**, Town of	8
84	**Vauxhall**, Town of	8
85	**Viking**, Town of	1
86	**Vulcan**, Town of	1
87	**Wembley**, Town of	2
88	**Wetaskiwin**, City of	1
89	**Whitecourt**, Town of	1
90	**Worsley**, Hamlet of (Clear Hills Co.)	3

Total Training Subsidy Access by Municipality (to Dec 31, 2013)	**90**
Total Access of Subsidized Courses by Rural Participants (to Dec 31, 2013)	**267**